













THE JOURNAL OF THE  
ROYAL AGRICULTURAL  
SOCIETY OF ENGLAND

VOL. 81

1920

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THE JOURNAL  
OF THE  
ROYAL AGRICULTURAL  
SOCIETY OF ENGLAND

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VOLUME 81

(BEING THE EIGHTY-FIRST VOLUME ISSUED SINCE THE  
FIRST PUBLICATION OF THE JOURNAL IN 1839)

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PRACTICE WITH SCIENCE

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LONDON:  
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1920

EXTRACT FROM THE SOCIETY'S BY-LAWS

*(Dating from the Foundation of the Society) :—*

“The Society will not be responsible for the accuracy of the statements or conclusions contained in the several papers in the Journal, the authors themselves being solely responsible.”

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## Binding of Back Volumes of the Journal.

THE Journal is issued this year to Governors and Members bound in paper covers, and Messrs. BUTLER & TANNER have contracted to bind this and back Volumes to make the Bound Volumes issued by the Society from 1901-4, and 1912-14, at the rate 3s. 6d. per Volume, and to supply the green cloth lettered cases, for the use of the bookbinders, at the price of 1s. 9d. each, post free, or 1s. 6d. each if called for at the office. Cases cannot, however, be supplied separately for the Volumes of the First and Second Series, 1839 to 1889.

All parcels and correspondence relative to the binding of back numbers of the Journal should be addressed (postage or carriage prepaid) to Messrs. BUTLER & TANNER, The Selwood Printing Works, Frome, Somerset.

To avoid confusion the Volumes of the Journal have been renumbered from the beginning, and the following Table shows both the Old and the New Numbers of each of the Volumes which have been issued since the first appearance of the Journal in 1839:

NEW NUMBERS	OLD NUMBERS	NEW NUMBERS	OLD NUMBERS
<b>FIRST SERIES</b>		<b>SECOND SERIES—continued.</b>	
Vol. 1. 1839-40	Vol. I. Parts I. (i.), II. (ii.), III. (iii.), and IV. (iv.)	Vol. 44. 1889	Vol. XIX. Parts I. (xxviii) and II. (xxviii)
" 2. 1841	" II. " I. (v.), II. (vi.) & III. (vii.)	" 45. 1894	" XX. " I. (xxix), and II. (xli)
" 3. 1842	" III. " I. (viii), II. (ix.), & III. (x.)	" 46. 1895	" XXI. " I. (xli) and II. (xlii)
" 4. 1843	" IV. " I. (xi) and II. (xii)	" 47. 1898	" XXII. " I. (xlii) and II. (xliii)
" 5. 1844	" V. " I. (xiii) and II. (xiv)	" 48. 1897	" XXIII. " I. (xliii) and II. (xliv)
" 6. 1845	" VI. " I. (xv) and II. (xvi)	" 49. 1888	" XXIV. " I. (xliv) and II. (xlvii)
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" 9. 1848	" IX. " I. (xvi) and II. (xvii)	Vol. 51. 1890	Vol. I. Parts I. (i), II. (ii), III. (iii), & IV. (iv)
" 10. 1849	" X. " I. (xviii) and II. (xix)	" 52. 1891	" II. " I. (5), II. (6), III. (7), & IV. (8)
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" 13. 1852	" XIII. " I. (xxv) and II. (xxvi)	" 55. 1894	" V. " I. (17), II. (18), III. (19), & IV. (20)
" 14. 1853	" XIV. " I. (xxviii) and II. (xxix)	" 56. 1895	" VI. " I. (21), II. (22), III. (23), & IV. (24)
" 15. 1854	" XV. " I. (xxxi) and II. (xxxii)	" 57. 1896	" VII. " I. (25), II. (26), III. (27), & IV. (28)
" 16. 1855	" XVI. " I. (xxxiii) and II. (xxxiv)	" 58. 1897	" VIII. " I. (29), II. (30), III. (31), & IV. (32)
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" 18. 1857	" XVIII. " I. (xxxviii) and II. (xxxix)	" 60. 1899	" X. " I. (37), II. (38), III. (39), & IV. (40)
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" 20. 1859	" XX. " I. (xliii) and II. (xliv)	" 62. 1901	Issued as an Annual Bound Volume.
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" 27. 1866	" II. " I. (iii) and II. (iv)	" 70. 1909	Issued as an Annual Volume in paper covers
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" 37. 1876	" XII. " I. (xxiv) and II. (xxv)	" 80. 1919	Issued as an Annual Volume in paper covers
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" 39. 1878	" XIV. " I. (xxviii) and II. (xxviii)		
" 40. 1879	" XV. " I. (xxxi) and II. (xxx)		
" 41. 1880	" XVI. " I. (xxxii) and II. (xxxii)		
" 42. 1881	" XVII. " I. (xxxiii) and II. (xxxiii)		
" 43. 1882	" XVIII. " I. (xxxv) and II. (xxxv)		

(The numerals within brackets indicate the numbers as printed on the several Parts of each Series.)

# JOURNAL

OF THE

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND

### REPORT BY THE JUDGES ON THE TRIALS OF AGRICULTURAL MOTORS, 1920.

Immediately after the Armistice interest in trials revived. It was felt that it would be unfair to ask manufacturers, whose staffs had been serving at the front, to take part in competitive trials until they had had the opportunity of reorganising their works, and the conclusion was arrived at that the earliest reasonable date for such trials would be the Autumn of 1920.

With the addition of one extra class, the Regulations were the same as issued in 1914.

The selection of a site was no easy matter, it being necessary not only to procure light and heavy land, as well as some undulating land, but also to see that there was sufficient of each sort—as similar as possible—to accommodate all the machines in any one class.

After visiting various districts throughout the country, land at Aisthorpe and Scampton, near Lincoln, was found to be the most desirable. The Scampton Aerodrome provided excellent facilities for storing the tractors, etc., and for the necessary administrative offices.

The total area of the land retained was about 800 acres.

The fields were measured up, and four similar plots allotted to the several machines of each class. Owing, however, to the lateness of the harvest, it was found impossible at the last moment to clear the crops off some of the fields, and a fresh distribution of plots had to be effected. As this was done without loss of time, the trials were able to start according to programme. Unfortunately, there was no time to publish new diagrams of the trial fields for the guidance of the public, beyond the large scale plans in the office which showed the necessary corrections.

**CLASSES AND PRIZES.**

For this competition the Society decided to form seven classes for entry, the prizes for each class to be a first prize, gold medal and £20, and a second prize, bronze medal and £10.

The classes were arranged as follows :—

**CLASS 1.**—Internal-combustion direct traction engine, not exceeding 24 h.p., suitable for ploughing two furrows, 10 in. wide by 6 in. deep.

**CLASS 2.**—Internal-combustion direct traction engine, not exceeding 30 h.p., suitable for ploughing three furrows, 10 in. wide by 6 in. deep.

**CLASS 3.**—Internal-combustion direct traction engine, over 30 h.p., suitable for ploughing four furrows, 10 in. wide by 8 in. deep.

**CLASS 4.**—Direct traction steam-engine plant, suitable for ploughing four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

**CLASS 5.**—Internal-combustion double engine set with wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

**CLASS 6.**—Double steam-engine set with wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

**CLASS 7.**—Self-propelled plough for ploughing not more than four furrows, not more than 10 in. wide by not more than 8 in. deep.

**HORSE-POWER.**—The rated horse-power was obtained by the Society's formula  $\frac{D^2 S R}{15400}$  where D is the cylinder diameter in inches ; S is the stroke in inches by number of cylinders ; and R is the number of revolutions per minute.

**REGULATIONS AND CONDITIONS.****CLASSES 1-6.**

1.—For the purpose of these trials an "Agricultural Tractor" shall be capable of :—

(a) Hauling direct in work or on the road a Plough, Cultivator, Harvester, or other Agricultural Implement.

(b) Driving Barn Machinery.

2.—The machines shall be tested for efficiency in carrying out various classes of work.

3.—Competitors will have to plough a given area of land, commencing with the size of furrow specified for each class, during which the fuel and water consumption will be recorded, and subsequently varying the depth and width at the discretion of the Judges.

In Classes 1, 2, 3 and 4 the Society is providing the ploughs in order to ensure uniformity of conditions. In the other classes competitors will provide their own ploughs.

NOTE.—Consequent on representations made by several competitors as to the difficulty of coupling their motor tractors to the ploughs selected so as to allow of their running with both wheels on the land, the question has been considered and it has been arranged that, so far as the hitch of the plough is concerned, Competitors may either provide their own hitch or arrange with the Plough Makers for such modification of the hitch as may be necessary to meet their requirements. Such modifications will be effected on the responsibility of the Competitors concerned, and must be completed before the commencement of the Trials. The last date for giving instructions to the Plough Makers will be August 16, 1920.

It must be clearly understood that no modification to any part of the plough aft of the hitch will be permitted.

4.—Each Competitor must, within ten days of the commencement of the trials, plough out *entirely* the plot allotted to him.

5.—Supplementary trials on various classes of land with ploughs and cultivators provided by the Society may be made at the discretion of the Judges, who may also decide to try any tractor with other types of implement they may consider necessary.

6.—Special attention will be paid in the ploughing and cultivating trials to the compression of the land by the machine, the space and time occupied in turning, the uniformity of the furrow ends and evenness of the furrow.

7.—The tractors in Classes 3, 4, 5 and 6 shall be capable of road haulage, and will be tested in that respect over courses which will be set out over the roads and land selected by the Society, and each Competitor shall declare before starting what weight he is prepared to haul over such course.

The fuel, water, and other supplies consumed will be noted on the road trial. With selected tractors hill-climbing trials may be made. Tractors fitted with winding gear may have the opportunity of demonstrating its advantages.

8.—Tractors will be tested driving on to a pulley on a countershaft fitted with a brake. The diameter of pulley, speed of countershaft, and load on brake assimilating to those of a threshing machine.

9.—The time taken and attendance given will be noted in all trials.

10.—The fuel, whether solid or liquid, will be provided by the Society. The coal will be Hard Steam Coal of uniform quality, and the petroleum or other liquid of one of the recognised brands.

11.—Each Competitor to state how many men will be required to attend to the machine.

12.—The following are some of the points to which special attention will be directed :—

- (a) Weight of machine.
- (b) Weight per inch width of wheel and diameter of wheel.
- (c) Mechanical design and construction.
- (d) Adaptability to various kinds of work, such as Harvesting and the like.
- (e) Time taken to prepare for work.
- (f) Ease and safety of handling.
- (g) Ease of turning and space required for same.
- (h) Efficiency of winding gear.
- (i) Facility of attachment.
- (j) Wheel devices.
- (k) Attendance necessary.
- (l) Consumption of fuel, water, and other supplies per unit of work done.
- (m) Price.

**SELF-PROPELLED PLOUGHS.—CLASS 7.**

The Trials of these will be on the same lines as the Ploughing Trials in Classes 1, 2 and 3.

13.—Competitors must appoint one representative through whom all communications to or from the Stewards or Judges shall be made.

14.—The Judges' decision, when duly recorded, will in all cases be final.

15.—The Society's Implement Regulations will apply to these Trials generally.

*NOTE.*—The trials in Classes 1, 2, 3 and 4 being competitive trials of motors and not of combined motors and ploughs, the Society provides the ploughs to ensure uniformity of conditions. In other Classes the Competitors will provide the ploughs.

16, Bedford Square,  
LONDON, W.C.1.

THOMAS McROW,  
*Secretary.*

July 30, 1920.

#### **SUPPLEMENTARY INSTRUCTIONS TO COMPETITORS AS TO DELIVERY OF TRACTORS AND ORDER OF TRIALS.**

The tractors to be delivered to the Seampton Aerodrome, about 7 miles from Lincoln Station. Competitors will have to make their own arrangements for transport, as the Trial Fields are outside the Railway Company's area of delivery.

All tractors must be delivered at the Aerodrome not later than 12 o'clock (noon) on Saturday, the 25th inst., where they will be stored until Monday morning, the 27th inst.

For the convenience of Competitors, tractors will be received at the Competitor's risk at the Aerodrome Site on Monday, 20th inst., and subsequent days; notice of the time of delivery must be previously sent to Mr. J. R. JACKSON, The Mill, Saxilby, Lincoln.

Competitors must send a responsible person to superintend delivery and find necessary labour in connection therewith.

The inspection of Tractors in Class II. will commence at the Aerodrome on Monday morning, the 27th inst., at 9 a.m., when each competitor or his representative must be present to give such technical explanation as may be required, and afford facilities for checking any dimensions desired.

Competitors will be at liberty, as soon as the tractor is inspected, to take it with its plough on to Field O to make a preliminary trial, which done he will proceed to Field P or R and take up his position on the plot allotted to him, and will then drain his paraffin and petrol tanks empty ready to receive the measured supply of oil on Tuesday morning.

The Trials Fields will each have a distinguishing letter, and the several plots will be numbered consecutively as shown on plan.

During Monday each competitor will be informed of the number of the plot on which he will commence the trial of his tractor.

On each of the following days, each afternoon, a notice will be posted up at the Administration Office at the Aerodrome setting out the programme of the work for the succeeding day.

The trials will commence on the light land, and will probably occupy three days.

Those on the heavy land will commence on Thursday, the 30th inst.

Paraffin, petrol and coal will be provided by the Society; lubricating oil by the competitors.

Competitors, as well as their attendants, to identify them with their

tractors, will be provided with distinguishing badges which they are requested to wear in a conspicuous position during the trials.

The Stewards, on the recommendations of the Judges, shall have power to postpone or suspend the trials in the event of unfavourable weather.

Tractors must each morning be stationed on the plot allotted to them and be ready to start work by 9 a.m.

Previous to commencing each trial the petrol and paraffin tanks must be drained empty.

The competitor must then state what quantity of petrol or paraffin he will require, and this will be supplied through the Observer who is in charge of the trial. Both the Observer and competitor (or his representative) must check over the quantity of oil served out and returned at the conclusion of each trial and endorse the docket for same.

In the case of steam engines a similar course will be adopted in the supply of coal, &c.

Water-carts will be in attendance and the water will be measured.

Each competitor must state definitely the number of attendants he will require to work his tractor, or steam engine and plough.

Any assistance rendered beyond that declared as necessary will be noted and the man-minutes recorded.

Each competitor shall appoint a responsible member of his staff as his manager to receive instructions from the Steward or Engineer, and by whom all enquiries for information must be made.

Competitors and their representatives shall assist in the carrying out of the Regulations and abide by the orders of the Stewards, especially in the way of keeping the public from crowding round their machines and impeding the work of the Judges.

The Judges and Stewards are empowered to enforce the Regulations, and, if circumstances render it desirable, to issue such additional Regulations as they may deem desirable.

No cards, printed matter or other advertisement of any kind to be carried on any tractor or implement.

Neither the Royal Agricultural Society of England nor the Society of Motor Manufacturers and Traders shall be liable for any loss or damage sustained by competitors or others at, or in connection with, the trials.

F. S. COURTNEY.

*September 13th, 1920.*

The Judges appointed by the Royal Agricultural Society of England were composed of three groups of four each.

In order to ensure complete interchange of the results of their own observation the Judges were arranged in four sets of three, one from each of the three groups, the composition of the sets being varied as occasion required. It may be noted that after discussion of the figures of performance, weights and other particulars, the decision of the Judges was unanimous on every award.

There were 46 entries: 10 in Class 1; 22 in Class 2; 3 in Class 3; 1 in Class 4; 2 in Class 5; 1 in Class 6; and 7 in Class 7.

Of these, 38 took part in the competition and 36 finished, 2 only being withdrawn during the trials. Those that completed were: 8 in Class 1; 17 in Class 2; 2 in Class 3; 1 in Class 4; 2 in Class 5; 1 in Class 6; and 5 in Class 7.



The general conditions of the trials were as follows :—

A preliminary examination of the tractors was made by the Judges on September 27. On September 28, Classes 2 and 5 worked on light land. On September 29, Classes 1, 3, 4, 6 and 7 worked on light land. On September 30, Classes 1, 3, 4, 6 and 7 made supplementary trials on light land, and Classes 2 and 5 worked on heavy land. On October 1, Classes 1, 3, 4, 6 and 7 worked on heavy land. On October 2, Class 7 worked on heavy land. On October 4, ploughing was done on hill land and tests of stopping down hill were carried out. On October 5, further hill ploughing and stopping tests were made. The overall diameter of turning circles was measured and machinery driving trials were made. On October 6, further trials were made, and selected machines were weighed and examined. On October 7, the trials were completed and the Judges' awards were published.

#### AWARDS.

CLASS 1. Internal Combustion Direct Traction Engine not exceeding 24 h.p., suitable for ploughing two furrows, 10 in. wide by 6 in. deep.

1st Prize, Gold Medal and £20. J. I. CASE THRESHING MACHINE CO.  
2nd Prize, Bronze Medal and £10. H. G. BURFORD & CO., LTD.  
("CLETRAC").

CLASS 2. Internal Combustion Direct Traction Engine not exceeding 30 h.p., suitable for ploughing three furrows, 10 in. wide by 6 in. deep.

1st Prize, Gold Medal and £20. ANCONA MOTOR CO., LTD. ("BRITISH WALLIS").

2nd Prize, Bronze Medal and £10. PETER BROTHERHOOD, LTD.  
("PETERBRO").

CLASS 3. Internal Combustion Direct Traction Engine over 30 h.p., suitable for ploughing four furrows, 10 in. wide by 8 in. deep.

1st Prize, Gold Medal and £20. JOHN LAUSON MANUFACTURING CO.  
2nd Prize, Bronze Medal and £10. (Not awarded.)

CLASS 4. Direct Traction Steam Engine Plant, suitable for ploughing four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. MANN'S PATENT STEAM CART & WAGON CO., LTD.

CLASS 5. Internal Combustion Double Engine Set, with Wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. JOHN FOWLER & CO. (LEEDS), LTD.  
2nd Prize, Bronze Medal and £10. J. & H. McLAREN, LTD.

CLASS 6. Double Steam Engine Set, with Wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. JOHN FOWLER & CO. (LEEDS), LTD.

CLASS 7. Self-Propelled Plough for ploughing not more than four furrows of not more than 10 in. wide by not more than 8 in. deep.

1st Prize, Gold Medal and £20. CRAWLEY AGRIMOTOR CO., LTD.  
2nd Prize, Bronze Medal and £10. MOTRAC ENGINEERING LTD.  
("MOLINE").

## DESCRIPTIONS OF COMPETING MACHINES.

The following are descriptions and notes on the machines actually taking part in the trials. The names of the tractors with the data and particulars supplied by the makers, corrected as far as possible, are given in Tables I and II in which they are arranged by classes. Table III gives the observed and calculated results of the Trials (see pages 45 to 56).

## CLASS I.

## BRITISH WALLIS.

## No. 3. ANCONA MOTOR CO., LTD.

This tractor is manufactured in England at Lincoln by Ruston & Hornsby, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at the low speed of 850 revolutions per minute, and rated at 23.6 h.p. The motor is governed by a hydraulic, positive-type governor, the effect being obtained by the pressure of the circulating water acting on a rubber diaphragm. The clutch consists of three metal discs, separated by two "ferodo" discs. It is easy of access, and adjustment is made by means of a spring plunger, which engages with one of twelve equally-spaced holes. The fuel is paraffin, petrol being used only for starting. The Halliday carburettor which is fitted takes water through a special jet, and delivers it to the intake; the air, which is drawn in through a "periscope pipe" at a considerable height above the level of any chaff that may be blown about in harvesting, therefore contains water vapour when entering the engine cylinder. The paraffin tank has a capacity of 20 gallons. The radiator is of the honey-comb type. The front wheels are 30 in. diameter by 8 in. wide; the rear wheels are 48 in. diameter by 12 in. wide, and the wheel-base is 84 in.

There are two sets of brakes; the first consists of internal-expanding "ferodo" lined shoes fitted to the rear wheels and independently operated on each wheel by a foot pedal. These drums are 5 in. diameter with shoes 2½ in. wide. The second brake is fitted to the countershaft and acts on the belt pulley.

There are two forward speeds and one reverse; the speed change is of the sliding-gear type, and a differential lock is fitted; the final drive is by worm and wheel. A special design of digger-type spuds is supplied. The hauling gear was not fitted to this vehicle, but is described under No. 4, Class 2.

The ground clearance of 13 in. is large; the position of the draw-gear attachment is carried so far back as to minimise the risk of capsizing by rearing. There is a range of adjustment of 3½ in. in the height of the draw-bar and of 10½ in. laterally.

The belt speed is about 2,000 ft. per minute, the pulley being 18 in. diameter by  $6\frac{3}{4}$  in. wide. The steering is by worm and wheel, and the tractor is spring supported.

The tractor has an overall length of 11 ft., an overall width of 5 ft. 1 in. It can turn in a circle of 26 ft. outside diameter, and it weighs approximately  $37\frac{1}{2}$  cwt. in working order.

#### AUSTIN.

##### NO. 5. AUSTIN MOTOR CO., LTD.

This tractor is manufactured in England at Northfield, near Birmingham, by the Austin Motor Co., Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 1,200 revolutions per minute, and rated at 21.9 h.p. The motor is provided with a governor of the centrifugal type fitted to the cam-shaft. The lubrication is of the forced-feed type, the oil being supplied through a hollow crankshaft. The clutch is of the steel-cone type engaging with detachable "ferodo" segments. The fuel is paraffin, petrol being used only for starting. The carburettor is of the Zenith type, and the intake air passes through a cleaner which can be used either wet or dry. The paraffin tank has a capacity of 10 gallons. The radiator is of the gilled type, and is stated to have 12 sq. ft. of tube surface. The radiator fan is driven by enclosed and lubricated spur gear. The front wheels are 30 in. diameter by 6 in. wide; the rear wheels are 42 in. diameter by 10 in. wide, and the wheel-base is 68 in.

Each rear wheel is fitted with an internal-expanding brake, 12 in. diameter by  $1\frac{1}{2}$  in. wide, capable of being operated independently. There are two forward speeds and a reverse; the speed change is of the sliding-gear type; a differential is fitted without differential lock. The final drive is through spur gear. Each driving-wheel is fitted with twelve detachable spuds, for which rubber pads can be substituted for road haulage; angle strakes are fitted for Colonial use. The front axle is mounted on a spring, giving great flexibility on uneven ground. Good ground clearance of 12 in. is provided; the position of the draw-gear pin is well to the rear (2 ft. 10 in.) of the centre of the back axle; it is provided with a range of 9 in. vertical adjustment, and a range of 15 in. to each side is given for lateral adjustment. The belt speed is 2,260 ft. per minute, the pulley being 24 in. diameter by 5 in. wide. The steering has a reduction ratio of 16 to 1.

The tractor has an overall length of 9 ft. 2 in., an overall width of 5 ft. 1 in. It can turn in a circle of 25 ft. 4 in. outside diameter, and it weighs approximately  $30\frac{1}{2}$  cwt. in working order.

**CLETRAC.**

No. 10. H. G. BURFORD & Co., LTD. (Figs. 2 & 4).

This tractor is manufactured in America at the works of the Cleveland Tractor Co., Cleveland, Ohio. It is propelled by a four-cylinder engine with vertical cylinders running at 1,000 revolutions per minute and rated at 22.9 h.p. The motor is governed by a centrifugal governor acting on the main throttle. The clutch is of the dry plate type with "ferodo" discs. There is only one forward speed, but this is capable of being varied by the throttle from  $2\frac{1}{2}$  to 4 miles per hour, and there is one reverse speed capable of being varied from  $1\frac{1}{2}$  to 2 miles per hour. The fuel is paraffin, petrol being used for starting only. The paraffin tank has a capacity of 11 gallons, and the engine base holds  $1\frac{1}{2}$  gallons of lubricating oil. The radiator is of the gilled tube type, about 4 sq. ft. surface, and the total water, including that in the clarifier, is 4 gallons. The carburettor is of the Kingston type.

The tractor is supported on chain-tracks 8 in. wide and having a bearing of 4 ft. 2 in. on the ground; the total supporting area is 800 sq. in., or 400 sq. in. for each track; the weight of the tractor is transferred to each track by three rollers.

Steering is effected by band brakes acting on the differential, the brakes slowing down one track and allowing the other to over-run. The ground clearance is 12 in. The draw-bar is 15 in. above the ground, and the distance of the centre of the back chain-wheel to the centre of the draw-bar pin is 10 in. There is a lateral adjustment for the draw-bar pin of 15 in. An emergency brake, 8 in. diameter by  $2\frac{1}{2}$  in. wide, is fitted acting on the differential. The belt speed is about 2,100 ft. per minute, the pulley being 8 in. diameter by 6 in. wide.

The tractor is 8 ft. 6 in. long overall by 4 ft. 2 in. wide. It is capable of turning in a circle of only 13 ft. outside radius, and its weight in full working order is about  $32\frac{3}{4}$  cwt.

**CASE 10-18.**

No. 12. J. I. CASE THRESHING MACHINE CO. (Figs. 1 & 3).

(Representative in England: F. J. WOODWARD, 134 King Street, Hammersmith, W.)

This tractor is manufactured in the United States of America by the J. I. Case Threshing Machine Co., Inc., of Racine, Wis. It is propelled by a four-cylinder engine with vertical cylinders, running at 1,050 revolutions per minute, and rated at 20.5 h.p. The heads are removable in one piece with the overhead valves. The motor is set across the tractor, that is to say, its axis is parallel to the rear axle. It is governed by a centrifugal governor,

enclosed and running in oil. The main part of the crank-case forms part of the main frame, which is of the one-piece casting type. The ignition is by high-tension magneto with impulse starter. The clutch is of the expanding-shoe type, with clutch shoes of cast steel faced with asbestos friction fabric. There are two forward speeds,  $2\frac{1}{2}$  miles per hour and  $3\frac{1}{2}$  miles per hour, and one reverse speed. The fuel is paraffin, petrol being used only for starting. The paraffin tank capacity is 9 gallons; the lubricating oil tank holds 4 gallons. The radiator is of the copper tube and fin type. The total capacity of the water tank and radiator is 7 gallons. The carburettor is of the Kingston vertical, single nozzle type, and the intake air is cleaned by being drawn through water in an air-washer.

A "Sylphon" thermostatic regulator is fitted for controlling the circulation of the cooling water. This regulator allows the water in the cylinder jackets to rise to the temperature of about  $160^{\circ}$  to  $180^{\circ}$  F., at which the thermostatic unit expands. The cylinders are thus allowed to become hot enough to vaporise the paraffin more quickly than with an ordinary circulation system, and the change over from petrol is enabled to be made earlier.

The front wheels are 30 in. diameter and 6 in. wide; the rear wheels are 42 in. diameter and 9 in. wide, and the wheel-base is 65 in.

There is a pulley brake which can be operated by the clutch lever when the transmission gears are in mesh. The speed change is of the sliding-gear type, and is fitted with a differential gear. Detachable angle-iron spuds or spades of wedge shape are used. The ground clearance is 13 in. There is no vertical adjustment, but large lateral adjustment of the draw-gear in seven positions.

The belt speed is about 3,900 ft. per minute, the pulley being 14 in. diameter by  $5\frac{1}{4}$  in. wide. The front axle is pivoted to the frame so that the tractor is carried on a three-point suspension; it is not sprung.

The tractor has an overall length of 8 ft.  $5\frac{1}{2}$  in., an overall width of 4 ft. 8 in. It can turn in a circle of 25 ft. outside diameter, and it weighs about 34 cwt. in working order.

#### **FORDSON.**

##### **No. 19. HENRY FORD & SON, LTD.**

This tractor is manufactured in Ireland by Henry Ford & Son, Ltd. It is propelled by a four-cylinder engine having vertical cylinders cast in one block. It runs at 1,000 revolutions per minute, and is rated at 20.8 h.p. No governor is fitted. The clutch is of the multiple disc type with seventeen hardened discs running in oil. The fuel is paraffin, petrol being used for

starting. The paraffin tank capacity is  $17\frac{1}{2}$  gallons, and that of the petrol tank is  $\frac{1}{2}$  gallon. The radiator is of the fin-tube type. The total capacity of the water tank and radiator is 9 gallons. The carburettor is that known as the Holley vaporiser, and the intake air is cleaned by passing through a float type air-washer. The front wheels are 27 in. in diameter by  $5\frac{1}{2}$  in. wide; the rear wheels are 42 in. diameter by 12 in. wide, and the wheel-base is 63 in. There are three forward speeds, a low gear of  $1\frac{1}{2}$  miles per hour, an intermediate ploughing speed of  $2\frac{3}{4}$  miles per hour, and a high speed of  $6\frac{3}{4}$  miles per hour, and one reverse speed of  $2\frac{1}{2}$  miles per hour. The speed change is of the sliding-gear type; there is a differential gear without lock. No brakes are fitted.

Riveted diagonally across the full width of the rear wheels are fourteen special angle-iron cleats. Extension rims (extra) may be used on the rear wheels for work on heavy soil, and nine rubber pads may be fitted to each wheel, after removal of the cleats, for road haulage. The ground clearance is 11 in., and the position of the draw-gear pin is about  $13\frac{1}{2}$  in. behind the centre of the back axle. Its height above the ground is 12 in.; it is without vertical adjustment, but with lateral adjustment in five positions about  $1\frac{1}{2}$  in. apart. The belt speed is about 2,500 ft. per minute, the pulley being  $9\frac{1}{2}$  in. diameter by  $6\frac{1}{2}$  in. wide, and running at the normal speed of the engine.

The tractor has an overall length of 8 ft. 6 in., an overall width of 5 ft. 2 in. It can turn in a circle of 22 ft. 6 in. outside diameter, and it weighs about  $23\frac{1}{2}$  cwt. in working order.

#### **GARNER.**

##### **NO. 23. HENRY GARNER, LTD.**

This tractor is manufactured in the United States of America. It is propelled by a four-cylinder engine with vertical cylinders, running at 900 revolutions per minute and rated at 23.2 h.p. The motor is fitted with a centrifugal governor controlled by a spiral spring, the tension of which can be varied by the hand control lever on the steering column, giving engine speeds from a minimum up to 900 revolutions per minute. The clutch is of the type known as the Borg & Beck single plate. The fuel is paraffin, petrol being used for starting. Water is injected with the fuel through an auxiliary float chamber; the carburettor is of the Cox Atmos type fitted with a Bennett dry air-cleaner. The radiator is of the tubular type. The front wheels are 30 in. in diameter by 4 in. wide; the rear wheels are 40 in. diameter by 10 in. wide, and the wheel-base is 6 ft. 4 in.

There is one internal-expanding brake on each rear wheel capable of being operated independently or simultaneously by foot pedals; the brakes are 15 in. diameter by 3 in. wide, and are of the self-retaining type. There are three forward speeds,

1.7, 2.7 and 5.2 miles per hour, and there is one reverse speed 1.7 miles per hour. The speed change is of the sliding-gear type, fitted with a differential but without a differential lock.

For use on the land, angle-strakes mounted on base rims in three sections, fitted with the patent quick attachment, can be used, and when working on the road solid rubber tyres, with patent wave tread, in four sections can be substituted. A semi-elliptic leaf spring is fitted to the front axle.

The ground clearance is  $9\frac{1}{2}$  in.; the position of the draw-gear pin behind the centre of the back axle is 26 in., and its height above the ground can be varied from  $12\frac{1}{2}$  in. maximum to 8 in. minimum. The range of lateral adjustment is 15 in., and, owing to the position of the draw-gear pin, there is no risk of accident by rearing. The belt speed is about 1,950 ft. per minute at the normal engine speed of 900 revolutions per minute, the pulley being  $8\frac{1}{2}$  in. diameter by  $8\frac{1}{2}$  in. wide.

The tractor has an overall length of 10 ft. 6 in., an overall width of 5 ft. 6 in. It can turn in a circle about 24 ft. 8 in. diameter, and it weighs about 36 cwt. in working order.

#### **SAMSON MODEL M.**

##### **NO. 24. GENERAL MOTORS, LTD.**

This tractor is manufactured in the United States of America at the works of the Samson Tractor Company, at Janesville. It is propelled by a four-cylinder engine with vertical cylinders running at 1,000 revolutions per minute and rated at 22.9 h.p. The lubrication is forced through the main bearings and through the crankshaft to the connecting-rod big-end bearings by a pump driven off the camshaft. The motor is fitted with a governor of the centrifugal type, operated from the magneto-drive gear, and consisting of a spindle with four grooved arms, each containing a steel ball, which operates on a sliding disc pressing against a button which in turn operates by a rod on the spindle carrying the arm connected to the butterfly valve in the induction pipe. The clutch is of the multiple disc type, having nineteen steel discs running in oil; the plates are kept in engagement by six coiled springs. The fuel is paraffin, petrol being used for starting, and the change being made after the vaporiser has become heated. The carburettor is of the "Kingston" standard float type with adjustable jet, and the air intake is passed through a water air-cleaner. The paraffin tank has a capacity of 18 gallons. The radiator is of the tubular type. The front wheels are 27 in. diameter by  $4\frac{1}{2}$  in. wide, and the rear wheels are 45 in. diameter by 12 in. wide. The wheel-base is 66 in.

There is one brake of the block type,  $3\frac{1}{2}$  in. by  $1\frac{1}{2}$  in., "ferodo" lined, acting on the inside of the 18-in. diameter belt pulley.

The tractor has two forward speeds of about 2 and 3 miles per hour and one reverse of 1 mile per hour. The speed change is of the sliding-gear type, and a differential without lock is fitted. Angle-section cleats are used on the land. The ground clearance is 10 in.; the position of the draw-gear attachment is 15 in. behind the back axle centre; it has no vertical adjustment, but a lateral adjustment of  $3\frac{1}{2}$  in. The belt speed is about 1,750 ft. per minute, the pulley being 18 in. diameter by 6 in. wide.

The tractor has an overall length of 9 ft. 6 in., an overall width of 4 ft. 10 in. It turns in a circle 27 ft. 2 in. outside diameter, and its weight in working order is about 30½ cwt.

#### **SAUNDERSON UNIVERSAL JUNIOR.**

##### **No. 42. SAUNDERSON TRACTOR & IMPLEMENT CO., LTD.**

This tractor is manufactured in England by the Saunderson Tractor & Implement Co., Ltd. It is propelled by a two-cylinder engine with vertical cylinders running at the speed of 950 revolutions per minute, and is rated at 20.0 h.p. The motor is governed by a centrifugal governor acting on the throttle. The clutch is of the cone type with leather face. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Degory" type, and the intake air is cleaned by passing through a gauze filter. The paraffin tank has a capacity of 8 gallons. The radiator is of the film type, 80 sq. ft. in area, and the total water capacity of the tank and radiator is 15 gallons. The front wheels are 27 in. diameter by 5 in. wide; the rear wheels are 42 in. diameter by 10 in. wide, and the wheel-base is 78 in.

There are two brakes: a foot brake, with internal-expanding shoes metal to metal, on the gear shaft, acting on both rear wheels, and a hand brake, with expanding shoes, acting on the differential drum. There are two forward speeds and one reverse. The speed change is of the sliding-gear type, and a differential is fitted without lock. Angle-section spuds are supplied and also angle-section overhanging biters.

The ground clearance of 16 in. is large. The height of the draw-gear can be varied from a maximum of  $23\frac{1}{2}$  in. to a minimum of  $16\frac{1}{2}$  in., and a lateral adjustment of the draw-gear of 15 in. is provided. The position of the draw-gear pin centre, 30 in. behind the back axle centre, is such as to minimise any risk of capsizing by rearing. The belt speed is about 3,000 ft. per minute, the belt pulley, running at the engine speed, being 12 in. diameter and  $6\frac{1}{2}$  in. wide.

Special attention has been given by the manufacturers to accessibility for all units, such as the clutch and belt pulley, and



there is provision on the clutch sleeve for making the pulley fast or loose. The suspension is of the three-point type.

The tractor has an overall length of 10 ft. 1 in., an overall width of 4 ft. 2½ in. It can turn in a circle of about 26 ft. outside diameter, and it weighs approximately 30 cwt. in working order.

## CLASS II.

### PARRETT.

#### NO. 1. THE AGRI-TRACTOR CONTRACT CO., LTD.

This tractor is manufactured in the United States of America by the Parrett Tractor Company. It is propelled by a four-cylinder engine having vertical cylinders mounted crosswise of the tractor, running at 1,000 revolutions per minute and rated at 25.8 h.p. The motor is fitted with a ball-type governor throttling directly and connected to the throttle at all speeds. The clutch is of the enclosed disc type with only three discs, the mechanism being lubricated by oil spray from the transmission. Lugs on the centre plate mesh into the rim of the fly-wheel, ensuring a positive drive. The discs are faced with "ferodo." The fuel is paraffin, petrol being used for starting. The carburettor is of the "Kingston" special paraffin type, and the air passes through an air-washer before entering the carburettor. The paraffin tank has a capacity of 18 gallons. The radiator is of the honeycomb type mounted lengthwise, and cooled by a fan 20 in. in diameter mounted on anti-friction bearings. The capacity of the water tank and radiator is 7 gallons. The front wheels are 46 in. diameter by 4 in. wide, and the rear wheels are 60 in. diameter by 10 in. wide. The wheel-base is 94 in.

There is one brake operated by foot-pedal on the left-hand side of the driver. It is of the band type, acting on the hub of the spur gear, which is 14 in. diameter by 2 in. wide. There are three forward speeds, 1½, 2½ and 4 miles per hour. The reverse is 1.8 miles per hour. The speed change is of the sliding-gear type fitted with differential, but without differential lock. Every heavy bearing surface is carried on ball or roller "Skefco" bearings. The bottom of the crank-case can be easily detached, giving easy access to all the working parts of the engine.

Four different styles of spuds are made for use on this tractor, cone, spade, angle-iron and extension angle-iron, and these may be obtained in different sizes to suit varying working conditions.

The ground clearance is 18 in., and the draw-gear pin is placed 42 in. behind the centre of the back axle, so that there is no risk of capsizing by rearing. There is no vertical adjustment

to the draw-gear, but a lateral adjustment of 2 ft. 1 in. to each side is provided. The belt speed is about 1,350 ft. per minute, the pulley being 12 in. diameter by  $7\frac{1}{2}$  in. wide, with convex face, cross ground to give greater adhesion to the belt.

The overall length of the tractor is 12 ft. 2 in.; the overall width is 6 ft. 1 in. It is capable of turning in a circle of 24 ft. 4 in. outside diameter, and its weight in working order is about  $46\frac{1}{2}$  cwt.

### HART-PARR 30.

#### NO. 2. COENRAAD DE WAAL.

This tractor is manufactured in the United States of America by the Hart-Parr Co., of Charles City, Iowa. It is propelled by a two-cylinder engine with horizontal cylinders running at 750 revolutions per minute and rated at 28.8 h.p. The motor is fitted with a centrifugal gear-driven governor acting on the throttle. The clutch is of the contracting band type, 15 in. diameter by 2 in. wide with asbestos face; it is lever controlled and easily adjustable. The fuel is paraffin, and it is possible to inject water with the fuel; petrol is used for starting. The carburettor is of the "Schebler" type with patented paraffin shunt. The intake air is taken by a periscope pipe, and can be passed through a water-cleaner equipment (extra). The paraffin tank has a capacity of 23 gallons. The radiator is of the honey-comb type with copper core, the total water capacity of the radiator and tank being 10 gallons. The front wheels are 28 in. diameter by 5 in. wide; the rear wheels are 52 in. diameter by 10 in. wide. The wheel-base is 7 ft. 5 in. Two independent brakes are fitted, one on the differential and one on the pulley.

There are two forward speeds of 2 and 3 miles per hour, and one reverse of about  $1\frac{1}{2}$  miles per hour. The speed change is of the sliding-gear type, and a differential is fitted with differential lock. Three types of spuds are fitted, spade spuds, cone spuds and strakes, the latter adjustable for three positions—straight across, at  $30^\circ$ , and at  $45^\circ$ . Good ground clearance of  $16\frac{1}{2}$  in. is provided. The position of the draw-gear pin admits of vertical adjustment from zero to  $16\frac{1}{2}$  in. above the ground, and a lateral adjustment is provided of a total of 48 in.

The belt speed is 2,750 ft. per minute at normal engine revolutions, the belt pulley being 14 in. diameter by 8 in. wide.

The length of the tractor overall is 11 ft. 9 in., and the width overall 6 ft. 4 in. It can turn in a circle 23 ft. 4 in. outside diameter, and its total weight full and in working order is about 49 cwt.

**BRITISH WALLIS.****No. 4. ANCONA MOTOR CO., LTD. (Figs. 5 & 7).**

(See No. 3, Class I, p. 7.)

This tractor is manufactured in England at Lincoln by Ruston & Hornsby, Ltd., and is identical in all main particulars with No. 3 described above under Class I. It was fitted with hauling gear, the drum being 19 in. in diameter and the hauling-gear rope  $\frac{3}{8}$  in. diameter. The hauling-gear fitted to this tractor is a special fitting (extra) and only attached if required.

**AUSTIN.****No. 6. AUSTIN MOTOR CO., LTD.**

(See No. 5, Class I, p. 8.)

This tractor is manufactured in England, at Northfield, near Birmingham, by the Austin Motor Co., Ltd., and is identical in all main particulars with No. 5 described above under Class I. The motor governor was set for the higher speed of 1,500 revolutions per minute, raising the rated horse-power to 27.4.

**BLACKSTONE.****No. 8. BLACKSTONE & CO., LTD.**

This tractor is manufactured in England, at Stamford, by Blackstone & Co., Ltd. It is propelled by a three-cylinder engine with vertical cylinders running at 750 revolutions per minute and rated at 23.8 h.p. The motor is governed by a centrifugal governor. The clutch is of the cone type, with "ferodo" face arranged in the engine fly-wheel and operated by a pedal. The fuel is paraffin, and in the case of this motor petrol is not used, the start being on paraffin from cold by means of compressed air. There is no carburettor as generally understood, but the engine works on a patented direct-combustion cold-start system; no water is injected with the fuel. The paraffin tank has a capacity of 10 gallons. The radiator is of tubular type with fins, and is served by a circulating tank; the approximate area of cooling surface is 130 sq. ft. The capacity of the water tank and radiator is 6 gallons. The tractor is supported on two chain-tracks, each 9 in. wide with 52 in. length in contact with the ground; the supporting area of each track being 468 sq. in., and the total area 936 sq. in. The load is transferred to each chain-track by four rollers.

The brake is foot-operated on a drum on the back of the main-drive bevel wheel on the second-motion shaft; the brake-drum is  $10\frac{1}{2}$  in. diameter by  $1\frac{1}{2}$  in. wide. There are three

forward speeds, 1.9, 2.8 and 3.7 miles per hour, and one reverse speed, 1.5 miles per hour. The speed change is of the sliding-gear type.

The ground clearance is  $7\frac{1}{2}$  in. ; the draw-bar is of the fixed type  $18\frac{1}{4}$  in. above the ground, the distance from the centre of the back chain-wheel to the centre of the draw-bar pin being  $9\frac{1}{2}$  in. There is a lateral adjustment of  $10\frac{1}{4}$  in. in the draw-gear.

The belt speed is about 2,300 ft. per minute, the pulley being 18 in. diameter by 7 in. wide. Steering is effected by a steering lever acting through a patented arrangement upon worms and brakes on the bevel wheels of the differential gear.

The tractor has an overall length of 8 ft. 1 in., an overall width of 4 ft. 6 in. It can turn in a circle of 22 ft. 8 in. outside diameter, and it weighs approximately 45 cwt. in working order.

#### **CLETRAC.**

NO. 11. H. G. BURFORD & CO., LTD.

This tractor is identical with No. 10 described above in Class I.

#### **CASE 15-27.**

NO. 13. J. I. CASE THRESHING MACHINE CO.

(Representative in England : F. J. WOODWARD, 134 King Street, Hammersmith, W.)

This tractor is manufactured in the United States of America at the works of the J. I. Case Threshing Machine Co., Racine, Wis. It is propelled by a four-cylinder engine with vertical cylinders cast in one block with overhead valves and fitted with detachable liners. It runs at 900 revolutions per minute and is rated at 28.4 h.p. The motor is governed by a centrifugal governor of the ball type enclosed and running in oil. The clutch is of the expanding-shoe pattern of cast-steel, faced with asbestos friction fabric. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" vertical single nozzle type, and the intake air is cleaned by being drawn through water. The paraffin tank has a capacity of 18 gallons. The radiator is of the copper-tube and fin type. The tank capacity, including that of the radiator, is 11 gallons of water. The front wheels are 32 in. diameter by 6 in. wide, and the rear wheels 52 in. diameter, by 12 in. wide, and the wheel-base is  $76\frac{1}{2}$  in.

There is a pulley brake operated by the clutch lever on the pulley when the transmission gears are in mesh. There are two forward speeds,  $2\frac{1}{2}$  miles per hour and 3 miles per hour, and one reverse,  $1\frac{3}{4}$  miles per hour ; the speed change is of the sliding-gear type. Angle-iron or wedge-shaped spuds are supplied ; no hauling gear is normally fitted. The ground clearance is 14

in.; the draw-gear is at a fixed height of 14 in., and has a total lateral adjustment of 3 ft. 6 in. The belt speed is about 3,750 ft. per minute, the pulley being 16 in. diameter by 6½ in. wide. The steering reduction gear is totally enclosed. The tractor is carried on three-point suspension, but is not sprung.

The tractor has an overall length of 10 ft. 7 in., an overall width of 6 ft. It can turn in a circle 31 ft. 8 in. outside diameter, and it weighs approximately 53 cwt. in full working order.

#### **CHASE.**

##### **NO. 14. CHASE TRACTORS CORPORATION, LTD.**

This tractor is manufactured in Canada, at Toronto, by the Chase Tractors Corporation, Ltd., and is propelled by a four-cylinder "Buda" motor with vertical cylinders cast in one block, running at 950 revolutions per minute and rated at 24.5 h.p. The motor is governed by a "Pierce" centrifugal governor enclosed and acting on the throttle. The clutch is of the "Bierman" internal expanding-shoe type, 14 in. diameter, fitted in the engine fly-wheel. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" automatic float feed type, and the intake air is cooled by an "R.W." water air-washer. The paraffin tank has a capacity of 12 gallons, the radiator is of the "Perfex" type set longitudinally and fitted with a 20 in. fan. The tank capacity, including that of the radiator, is 6 gallons of water. The front wheel is 36 in. diameter by 8 in. wide, the rear wheels are 48 in. diameter by 12 in. wide, and the wheel-base is about 8 ft. 6 in.

There is one brake of the contracting band type applied to the pinion shaft engaging with the bull-ring on the rear wheels. No differential is fitted. There are two forward speeds, 1½ and 2½ miles per hour respectively, and one reverse at 1 mile per hour. The speed change is of the sliding-gear type. Each rear wheel can be clutched individually. The spuds used are twelve 2½ in. angles to each wheel, and extension rings can be fitted of 22 in. face each.

The ground clearance is 15 in., and the position of the draw-gear pin centre, 30 in. behind the back axle centre, is sufficient to minimise risk of capsizing by rearing. There are three vertical positions for the draw-gear at heights of 15 in., 18 in. and 21 in. respectively; there is a total lateral adjustment of 2 ft. 6 in., and the draw-gear can be fixed in five positions. The belt speed is about 2,500 ft. per minute, the belt pulley being 10 in. diameter by 8 in. wide.

The tractor has an overall length of 11 ft. 8 in., an overall width of 6 ft. It can be turned in a circle 16 ft. 6 in. outside

diameter, and it weighs approximately 48½ cwt. in working order.

**TWIN CITY 12-20.**

No. 16. FAIRBANKS, MORSE & Co., LTD.

This tractor is manufactured in the United States of America by the Minneapolis Steel and Machinery Co., of Minneapolis, Minn., and is propelled by a four-cylinder motor with vertical cylinders having four overhead valves to each and provided with a special arrangement for making it impossible for the valves to drop into the cylinders. The motor runs at 1,000 revolutions per minute and is rated at 28.1 h.p. It is governed by an enclosed centrifugal governor acting on a throttle in the induction pipe. The clutch is of the dry single disc type. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Twin City Holley Kerosene" type, the intake air being passed through a "Bennett" dry cleaner. The paraffin tank has a capacity of about 19 gallons. The radiator is of the tubular type with fins, and a thermostatic valve is fitted between the motor and the radiator. The capacity of the tank and radiator is 8 gallons of water. The front wheels are 34 in. diameter by 5¼ in. wide, the rear wheels are 50 in. diameter by 12 in. wide, and the wheel-base is 84 in.

There is one brake about 20 in. diameter by 2 in. wide on the intermediate gear, acting on both driving wheels, and it can be operated whether the change gears are in or out of gear. A differential is fitted without differential lock. There are two forward speeds, 2.2 and 2.9 miles per hour, and one reverse of 1½ miles per hour. The speed change is of the sliding-gear type. Spade lugs, or angle-iron cleats, or both are used.

The ground clearance is 11 in., and the position of the draw-gear pin centre is 16 in. behind the centre of the back axle. The draw-gear is at a fixed height of 16 in. above the ground, and has a lateral adjustment of 12 in. The belt speed is about 2,700 ft. per minute, the pulley being 16 in. diameter by 6½ in. wide.

The tractor has an overall length of 11 ft. 2 in., an overall width of 5 ft. 3 in. It can turn in a circle about 25 ft. 6 in. diameter, and weighs about 43½ cwt. full and in working order.

**FIAT 18-25.**

No. 17. FIAT MOTORS, LTD.

This tractor is manufactured in Italy, at Turin, for Fiat Motors, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 28.3 h.p. The motor is provided with a governor of the centrifugal type. The clutch is of the multiple disc type. The

carburettor is the Fiat patent twin jet. The fuel is paraffin, petrol being used only for starting, and the intake air is cleaned by passing through water. The paraffin tank has a capacity of 14 gallons, the radiator is of the gilled tube type, stated to have a total cooling surface of 31 sq. ft. The capacity of the radiator is 7 gallons, no water tank being fitted. The front wheels are 32 in. diameter by 5 in. wide, the rear wheels are 52 in. diameter by 12 in. wide, and the wheel-base is 69 in.

One metal-to-metal brake is fitted with expanding shoes acting on the drum to which the belt pulley is bolted. The brake is hand-operated, has an inside diameter of  $10\frac{3}{4}$  in., and the shoes are  $2\frac{3}{8}$  in. wide. It acts on the road wheels, or on the pulley, through the transmission shaft. There are three speeds forward, 2, 3 and 4 miles per hour approximately, and one reverse of about  $2\frac{1}{2}$  miles per hour. The speed change is of the sliding-gear type and a differential gear is fitted. The final drive is through worm-gear. Diagonal strakes of angle-iron are fitted by means of a hook at one end and one bolt at the other for use on the land.

The ground clearance is 15 in., the position of the draw-gear can be varied vertically from a maximum of  $27\frac{1}{2}$  in. to a minimum of  $15\frac{1}{2}$  in. The plough anchorage is 26 in. behind the centre of the back axle. It has a range of 17 in. lateral adjustment on each side of the centre line. The belt pulley is driven through the change gear, giving a belt speed of about 1,840 ft. per minute on top gear, 1,220 ft. per minute on second gear, and 750 ft. per minute on first speed. The pulley is 13 in. diameter by  $6\frac{1}{2}$  in. wide.

The tractor has an overall length of 10 ft., excluding draw-gear, or 10 ft. 11 in., including the draw-gear. It has an overall width of 5 ft. 6 in. It can turn in a circle 26 ft. 8 in. diameter, and weighs approximately 52 cwt. in working order.

#### **MARTIN.**

No. 29. MARTIN'S CULTIVATOR Co., LTD.

This tractor is manufactured in England, at Stamford, by Martin's Cultivator Co., Ltd. It is propelled by a four-cylinder engine with horizontal cylinders running at 900 revolutions per minute and rated at 23.2 h.p. The motor is governed by a centrifugal enclosed governor fitted with an adjustable spring. This spring adjustment is controlled by a lever from the steering column. The clutch is of the cone type, "ferodo-lined," acting on the inside of the engine fly-wheel. A ball-thrust washer takes the thrust of the clutch spring, and flexible couplings allow for the end movement required for operating the clutch. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Holley" type, and no air-cleaner is fitted. The paraffin

tank has a capacity of 15 gallons. The radiator is of the gilled-tubular type, having a total cooling surface of approximately 38 sq. ft. The capacity of the tank and radiator is 9 gallons of water. The front wheels are 33 in. diameter by 6 in. wide, the back wheels are 51 in. diameter by 10 in. wide, and the wheel-base is 83 in.

The tractor is fitted with two independent brakes: a pedal-operated internal-expanding brake acting on the inside of the driving pulley on the gear-box shaft having two "ferodo-lined" brake shoes, 2 in. wide, the diameter of the brake drum being 16½ in., and a hand-wheel screw-operated brake acting on the outside of the gear-ring of each rear wheel, and having two "ferodo-lined" shoes 2 in. wide acting on a diameter of 35½ in.

There are three forward speeds of 1.75, 2.5 and 3.6 miles per hour, and one reverse of 2.2 miles per hour. The speed change is of the sliding-gear type and a differential is fitted without differential lock. Forty detachable spuds are supplied for the rear wheels for field work, and 40 detachable rubber pads (extra) for road work; angle rings are fitted to the front wheels for field work.

The ground clearance is 12½ in. The draw-gear attachment is 14 in. behind the centre of the back axle, and has a range of 9 in. from a minimum height of 18 in. to a maximum of 27 in. It also has a lateral adjustment of 13 in. The belt pulley is driven through the change-gear, giving three speeds clockwise and one contra-clockwise of 2,100, 1,440, 1,035 and 1,300 ft. per minute respectively. The belt pulley is 18 in. diameter by 6 in. wide. Hauling gear is fitted, having three speeds of 23, 32 and 47 revolutions per minute for normal engine revolutions, the hauling-gear drum being 6½ in. in diameter and the hauling-gear rope ½ in. diameter. It is operated by means of a simple lever.

The tractor has an overall length of 11 ft. 9 in., an overall width of 5 ft. 11 in. It can turn in a circle 30 ft. 6 in. outside diameter, and it weighs approximately 52 cwt. in working order.

#### **E. B. (EMERSON BRANTINGHAM).**

##### **No. 32. MELCHIOR, ARMSTRONG & DESSAU.**

This tractor is manufactured in the United States of America by Emerson Brantingham, at Rockford, Ill. It is propelled by a four-cylinder engine with horizontal cylinders running at 900 revolutions per minute and rated at 26.4 h.p. The motor is governed by a horizontal centrifugal governor driven by the camshaft and controlling a butterfly throttle. The clutch is of the cone type "ferodo-lined" with ball-thrust bearings and with



a "ferodo-lined" spring stop. The fuel is paraffin, petrol being used only for starting. An arrangement is fitted for water injection, but is seldom used in this country. The carburettor is of the "Stormberg" type with hot-spot manifold, and the intake air is cleaned through a "Bennett Dry Vortex" air-cleaner. The paraffin tank has a capacity of 16 gallons. The radiator is of the honeycomb type about 2 ft. 6 in. square, and the total water capacity of tank and radiator is 7 gallons. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 12 in. wide, and the wheel-base is 87 in.

There is one band brake, "ferodo-lined," pedal-operated, 5 in. diameter with 3 in. face, adjustable and acting on the final-drive shaft to the driving pinions. There are two forward speeds of about 1.8 and 2.3 miles per hour, and one reverse of 1.8 miles per hour. The speed change is of the sliding-gear type, and a differential without differential lock is fitted. Angle-steel spuds, 2 in. by 3 in., extending 3 in. over the wheel, are fitted. No hauling gear is provided.

The ground clearance is 12 in., and there is a vertical adjustment of the draw-gear of 4 in. from a maximum of 16 in. to a minimum of 12 in. There is a lateral adjustment of 15 in. The draw-bar pulls from a point 2 in. in front of the back axle centre. The belt speed is about 2,800 ft. per minute, the belt pulley being 12 in. diameter by  $6\frac{3}{8}$  in. wide.

The tractor has an overall length of 11 ft. 1 in., an overall width of 4 ft. 7 in. It can turn in a circle 28 ft. outside diameter, and it weighs approximately 44 cwt. in working order.

#### G. O. (GENERAL ORDNANCE).

##### NO. 34. NOYES, STOCKWELL & CO.

This tractor is manufactured in the United States of America by the General Ordnance Co., of Derby, Conn., and Cedar Rapids, Iowa. It is propelled by a four-cylinder engine with vertical cylinders running at 955 revolutions per minute and rated at 28.9 h.p. The motor is governed by a "Waukesha" centrifugal governor actuating the butterfly throttle. The drive is by friction disc, a fibre wheel being brought into contact with one or other of two steel discs mounted on a cross shaft. There are six changes of speed, ranging from 2 to 4 miles per hour in forward gear and the same in reverse. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" paraffin type, and water to the extent of 1 part in 20 is injected with the fuel. The intake air is cleaned by passing through a "Bennett" cleaner. The paraffin tank has a capacity of 20 gallons. The radiator is of the "Perfex" type, having about 70 sq. ft. of cooling surface. The water capacity, including

the radiator, is about  $5\frac{1}{2}$  gallons. The front wheels are 31 in. diameter by  $5\frac{1}{2}$  in. wide, the rear wheels are 46 in. diameter by 10 in. wide, and the wheel-base is 86 in.

There are two independent foot brakes of the band type, acting on drums 10 in. diameter by 2 in. wide, on each side of the differential; no differential lock is fitted. Angle spuds, 3 in. by 2 in. by 18 in., are fitted. There is no hauling gear. The ground clearance is large, 18 in., and the distance of the draw-gear centre behind the back axle centre 24 in. There is no vertical adjustment to the draw-gear, but large lateral adjustment of 30 in. in all. The normal belt speed is about 2,400 ft. per minute, the pulley being 10 in. in diameter by 6 in. wide.

The tractor has an overall length of 10 ft., an overall width of 5 ft. 1 in. It can turn in a circle about 22 ft. 6 in. outside diameter, and it weighs approximately  $39\frac{3}{4}$  cwt. full and in working order.

#### PETERBORO.'

NO. 36. PETER BROTHERHOOD, LTD. (Figs. 6 & 8).

This tractor is manufactured in England, at Peterborough, by Peter Brotherhood, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 29.0 h.p. The motor is governed by a centrifugal governor acting on a butterfly throttle valve. The clutch is of the cone type with "ferodo-lining." The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Zenith" type, and no water is injected with the fuel. The intake air is cleaned by passing through a gauze strainer situated in a protected position under the bonnet. The paraffin tank has a capacity of 18 gallons. The radiator is of the gilled-tube type and has an area of about 17.5 sq. ft. of cooling surface. The total capacity of water tank and radiator is  $8\frac{1}{2}$  gallons. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 10 in. wide, and the wheel-base is 87 in.

There is one brake of the band type with "ferodo-lining" acting on a drum  $5\frac{1}{2}$  in. diameter by  $2\frac{1}{2}$  in. wide on the end of the second-motion shaft. There are two forward speeds,  $1\frac{1}{4}$  and  $2\frac{1}{2}$  miles per hour respectively, and one reverse,  $1\frac{1}{2}$  mile per hour. The speed change is of the sliding-gear type, and a differential is fitted without differential lock. The final drive is through a pinion and ring. Deep angle-iron spuds are supplied for land work, and rubbers (extra) can be fitted for road haulage.

Good ground clearance, 12 in., is provided. The height of the draw-gear can be adjusted from a maximum of 18 in. to a

minimum of 10 in. The distance of the draw-gear pin centre behind the back axle centre is 24 in., and the draw-gear has a lateral adjustment of 6 in. on either side of the centre line. The belt speed is about 2,800 ft. per minute, the pulley being 12 in. diameter by  $5\frac{1}{2}$  in. wide.

Special attention has been paid to the design and construction of the motor, the piston and cylinders being so arranged as to prevent leakage of unvaporised paraffin past the pistons into the crank chamber. This prevents pollution of the lubricating oil and tends to economy in the combined cost of fuel and lubricating oil.

The tractor has an overall length of 11 ft., an overall width of 5 ft. It can turn in a circle of 37 ft. outside diameter, and it weighs approximately  $50\frac{1}{2}$  cwt. in working order.

#### **PICK.**

##### **NO. 37. PICK MOTOR CO., STAMFORD.**

This tractor is made in England, at Stamford, at the works of the Pick Motor Co. It is driven by a four-cylinder motor running at 800 revolutions per minute and rated at 21.0 h.p. The clutch is of the cone type. The normal fuel is paraffin, petrol being used for starting, but petrol only was used on the trial. The capacity of the paraffin tank is 8 gallons, and that of the water tank is 5 gallons. The front wheels are 36 in. diameter by 5 in. wide, and the rear wheels are 48 in. diameter by 12 in. wide.

There are two brakes of the expanding type.

There are three forward speeds of 5.1, 2.6 and 1.7 miles per hour, and a reverse. The speed change is of the sliding-gear type. The height of the draw-gear can be varied from a maximum of 24 in. to a minimum of 10 in. The weight of the tractor complete and in running order is about 40 cwt.

#### **SAUNDERSON UNIVERSAL "G."**

##### **NO. 41. SAUNDERSON TRACTOR & IMPLEMENT CO., LTD.**

This tractor is manufactured in England, at Bedford, by the Saunderson Tractor & Implement Co., Ltd. It is propelled by a two-cylinder engine with vertical cylinders running at a speed of 750 revolutions per minute and rated at 23.6 h.p. The motor is governed by a centrifugal governor acting on the throttle. The clutch is of the cone type with leather face. The fuel is paraffin, petrol being used only for starting. The carburettor is of the firm's own make, and the intake air is cleaned by passing through a gauze filter. The paraffin tank has a capacity of 10 gallons. The radiator is of the film type stated to be of 115 sq. ft. area of cooling surface, and the total water capacity of the tank and radiator is 17 gallons. The front wheels are

30 in. diameter by 6 in. wide, the rear wheels are 48 in. diameter by 10 in. wide, and the wheel-base is 90 in.

There are two brakes, an internal-expanding shoe brake on the gear shaft acting on both rear wheels, and a hand contracting band brake acting on the differential drum and consequently on both wheels. There are three forward speeds,  $1\frac{1}{2}$ ,  $2\frac{1}{2}$  and  $4\frac{1}{2}$  miles per hour, and one reverse of  $2\frac{1}{2}$  miles per hour. The speed change is of the sliding-gear type, and a differential is fitted without lock. Angle-section spuds are supplied and also angle-section overhanging biters.

There is large ground clearance, 18 in.; the height of the draw-gear can be varied from a maximum of  $26\frac{1}{2}$  in. to a minimum of  $16\frac{1}{2}$  in., the distance of the draw-gear pin centre behind the back axle centre is 36 in., so that the risk of capsizing by rearing is minimised. There is a lateral adjustment of the draw-gear of 21 in. in all. The belt speed is about 2,450 ft. per minute, the pulley being 12 in. diameter by 7 in. wide. The belt pulley can be made fast or loose by means of the clutch. The tractor is carried on three-point suspension.

The tractor has an overall length of 12 ft., an overall width of 5 ft. 6 in. It can turn in a circle 36 ft. outside diameter, and it weighs approximately 52 cwt. in working order.

#### GLASGOW.

##### NO. 45. WALLACE (GLASGOW), LTD.

This tractor is manufactured in Scotland, at Glasgow, by Wallace (Glasgow), Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 1,150 revolutions per minute and rated at 26.7 h.p. The motor is provided with a governor of the "Pickering" type, supplied by the Pierce Governor Co., of America. The clutch is of the steel cone type, "ferodo-faced." The fuel is paraffin, petrol being used for starting. The carburettor is of the "Zephyr" central jet type, and the intake air is cleaned by being passed through removable wire gauze filters. The paraffin tank has a capacity of 14 gallons, the radiator is of the gilled-tube type stated to be about 14 sq. ft. area. The total capacity of water tank and radiator is 8 gallons.

The tractor has three wheels, all 39 in. diameter and all driven, the two front wheels are 8 in. wide and are driven through ratchets, so that on a straight course all three wheels drive as though solidly connected. The arrangement is such that when turning, the front wheel, which is on the inner track, describes the same path as the rear wheel, and the outer front wheel is enabled to overrun by its ratchet gear. The wheel-base is 75 in.

One pedal-operated brake of the cast-iron expanding internal-shoe type, 9 in. in diameter by  $1\frac{1}{8}$  in. wide, is fitted on the side shaft. The shaft runs at 87 revolutions per minute on the low gear and at 140 revolutions per minute on the high gear. There are two forward speeds,  $2\frac{1}{2}$  and  $4\frac{1}{2}$  miles per hour, and one reverse speed of  $2\frac{1}{2}$  miles per hour. The speed change is of the sliding-gear type and there is no differential gear. A gear is fitted for lowering one of the front wheels, the amount of tilt being regulated by an adjusting screw between the frame and axle. Cast-iron spuds, 3 in. and 4 in. long, of the spade type, with curved flanks to ensure a clean entrance to and exit from the soil, are provided.

The ground clearance is 14 in. The height of the draw-gear above the ground can be varied from 12 in. maximum to 9 in. minimum, and the distance of the draw-gear pin centre behind the back axle centre is 27 in., so that there is no risk of capsizing by rearing. The draw-gear has a lateral adjustment of 10 in. The belt speed is about 2,600 ft. per minute, the pulley being 9 in. diameter by 5 in. wide.

The tractor has an overall length of 11 ft. 4 in., an overall width of 5 ft. It can turn in a circle 36 ft. outside diameter, and it weighs approximately  $37\frac{1}{2}$  cwt. in full working order.

#### **NEW SIMPLEX.**

No. 46. W. WEEKS & SON, LTD.

This tractor is manufactured in England, at Maidstone, by W. Weeks & Son, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 24.3 h.p. The motor is provided with a governor of the centrifugal type carried on the camshaft gear, totally enclosed and acting on the throttle valve in the induction manifold. The clutch is of the dry multi-disc type. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Zenith" type with Weeks' patent vaporiser. The intake air is cleaned dry. The paraffin tank has a capacity of 5 gallons, the radiator is of the tube type, having a total area of cooling surface of about 79 sq. ft. The tank capacity, including radiator, is 5 gallons of water. The front wheels are 30 in. diameter by 5 in. wide, the rear wheels are 40 in. diameter by 10 in. wide, which can be increased to  $14\frac{1}{2}$  in. by using extension rims, and the wheel-base is 72 in.

There is one band brake 6 in. in diameter by 2 in. wide on the cardan shaft, and, when the tractor is supplied with rubber-tired wheels for road hauling, two band brakes on drums on each rear wheel, 24 in. diameter by 2 in. face, operated by screw-gear, are fitted. There are three forward gears,  $1\frac{1}{2}$ ,  $2\frac{1}{2}$  and  $4\frac{1}{2}$  miles per hour, and one reverse of  $1\frac{1}{2}$  mile per hour. The

speed change is of the sliding-gear type, and a differential is fitted with a differential lock. The final drive is through a pinion and gear ring. Cast-iron spuds and angle strakes are supplied with each tractor.

Ground clearance of 12 in. is provided; the position of the draw-gear pin is well to the rear, being 27 in. behind the centre of the back axle. It is provided with a range of 8 in. vertical adjustment from 20 in. maximum to 12 in. minimum, and has a lateral adjustment of 20 in. The belt speed is 2,350 ft. per minute, the pulley being 10 in. diameter by 6 in. wide. An 8 in. pulley can be supplied alternatively.

The tractor has an overall length of 8 ft. 6 in., an overall width of 4 ft., or 4 ft. 9 in. if extension rims are fitted. It can turn in a circle 25 ft. 9 in. outside diameter, and it weighs approximately 35 cwt. full and in working order.

### CLASS III.

#### BERNA.

##### NO. 7. FABRIQUE D'AUTOMOBILES BERNA, S.A.

This tractor is constructed in Switzerland, at Olten, and is driven by a four-cylinder motor having vertical cylinders, 115 mm. diameter by 160 mm. stroke, running at 1,000 revolutions per minute and rated at 33.5 h.p. The motor is governed by a centrifugal governor entirely enclosed and sealed. It is fitted with a leather cone clutch. The fuel is petrol, and the capacity of the petrol tank is 26 gallons. The radiator is of the honeycomb type, and the contents of the tank, including that of the radiator, are 10 gallons of water. The carburettor is of the "Claudel-Berna" type, without special method for cleansing the intake air. The front wheels are 33 in. diameter by 6 in. wide, the rear wheels are 65 in. diameter by 12 in. wide, and the wheel-base is 120 in. There are two brakes acting on the countershafts, capable of being operated independently to facilitate steering. There are three forward speeds, 1, 2 and 6½ miles per hour, and one reverse of 1½ mile per hour. The speed change is of the sliding-gear type. There is a differential gear without differential lock.

The ground clearance is 10 in., and the draw-gear pin is 32 in. behind the back axle, minimising risk of capsizing by rearing. It has a vertical adjustment from a maximum of 12 in. to a minimum of 9 in. The lateral adjustment of the draw-gear is 5 in. Cross strakes of angle-iron bent to the form of the flank of a gear tooth are fitted to the back wheels. A capstan gear is fitted, and the tractor can be transformed into a road-tractor by substituting wheels with rubber tyres. The belt speed at

normal engine revolutions is 1,000 ft. per minute, the belt pulley being 10 in. diameter by 5 in. wide.

The length of the tractor overall is 14 ft. 5 in., the width overall is 5 ft. 4 in. It is capable of turning in a circle 32 ft. outside diameter, and weighs about 66 cwt. full and in working order.

#### LAUSON 15-30.

##### NO. 27. THE JOHN LAUSON MANUFACTURING CO.

(Figs. 9 & 11).

This tractor is constructed by the John Lawson Mfg. Co., of New Holstein, Wis., in the United States of America. It is propelled by a four-cylinder motor having vertical cylinders running at 950 revolutions per minute and rated at 33.4 h.p. It is fitted with a "Taco" governor of the enclosed centrifugal type mounted on ball-bearings and running in oil. The clutch is of the internal expanding-shoe type, self-locking and easily accessible. The fuel is paraffin, petrol being used only for starting. No water is injected with the fuel. The capacity of the paraffin tank is 23 gallons. The radiator is of the honeycomb type, having  $4\frac{1}{2}$  sq. ft. area of cross-section. The capacity of the radiator is  $5\frac{1}{2}$  gallons of water. The carburettor is of the "Kingston" paraffin fitted type with "Siphon" air-washer. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 12 in. wide, and the wheel-base is 86 in.

There are two foot-operated independent brakes of the internal-expanding type for facilitating turning. A hand-operated brake is also provided, acting on the belt pulley. There are two forward speeds,  $1\frac{3}{4}$  and  $2\frac{1}{2}$  miles per hour, and one reverse of  $1\frac{1}{2}$  mile per hour. The speed change is of the sliding-gear type. There is a differential with differential lock. The ground clearance is  $11\frac{1}{2}$  in., the draw-gear pin centre is 32 in. behind the back axle centre, minimising risk of capsizing by rearing. The draw-gear is fixed at a height of 12 in. and has a lateral adjustment of 27 in. Spuds of pyramid shape are supplied, and also strakes of various patterns. The belt speed at the normal engine revolutions is about 2,350 ft. per minute, the belt pulley being 18 in. diameter by 6 in. wide.

The length of the tractor overall is 11 ft. 4 in., the width overall is 6 ft. 2 in. It is stated to be capable of turning in a circle 20 ft. outside diameter, and its weight is about 62 cwt. full and in working order.

## CLASS IV.

**MANN STEAM TRACTOR.**

NO. 28. MANN'S PATENT STEAM CART & WAGON CO., LTD.  
(Figs. 10 & 12).

This tractor is manufactured at Leeds, in England, by Mann's Patent Steam Cart & Wagon Co., Ltd. It is driven by a two-cylinder compound engine stated to develop 25 b.h.p. when running at 450 revolutions per minute. The governor is of the spring-loaded centrifugal type made by the manufacturers. Change of gear is effected by means of a sliding pinion on the second-motion shaft gearing into wheels of the third-motion shaft. The boiler is of the locomotive type, having 3 sq. ft. grate area and 57.5 sq. ft. total heating surface. There is no super-heater; a spark arrester of the wire-cage pattern is supplied on the chimney top, or, if preferred, a perforated plate can be fitted in the smoke-box. The feed is by a slow-speed plunger pump running at about one-third of the engine speed and also by a "Penberthy" injector. Coal is used as fuel, the capacity of the bunker being 3 cwt. The capacity of the water tank is 200 gallons. Two attendants are required. The front wheels are 35 in. diameter by 8 in. wide, the rear wheels are 51 in. diameter by 20 in. wide, and the wheel-base is 97 in.

There are two brakes: an external-contracting band acting on a drum on the rear axle 25 in. diameter by 3 in. wide; and a combined steam brake and reversing gear.

The ground clearance is 9 in., the distance of the draw-gear pin behind the centre of the back axle is 30 in. The height of the draw-gear is fixed at 19 in. above the ground, but it has a lateral adjustment of 30 in. There are three forward speeds,  $2\frac{1}{4}$ ,  $3\frac{1}{2}$  and 5 miles per hour at normal engine speed, and the same in reverse. Strakes set diagonally on the wheels,  $3\frac{1}{2}$  in. wide, with a  $2\frac{1}{2}$  in. space between, are used, as well as 12 spade-shaped spuds on each rear wheel. The front wheels are fitted with angle-iron bands. Hauling gear is fitted, the drum diameter being  $19\frac{1}{2}$  in. and the diameter of the hauling rope  $\frac{1}{2}$  in. The drum makes 29, 46 or 66 revolutions per minute at normal engine speed, according to the gear engaged, equivalent to 150, 235 or 340 ft. per minute.

The length of the tractor overall is 13 ft. 5 in., the width of the tractor overall is 5 ft. 10 in. It is stated to be capable of turning in a circle 24 ft. outside diameter. The load on the front wheels at rest is about 1 ton 11 cwt., and on the back wheels 3 tons 17 cwt. The total weight is about 5 tons 8 cwt. full and in working order. The tractor is mounted on springs to conform with the Heavy Motor Cars Act.



## CLASS V.

**FOWLER MOTOR CABLE PLOUGH.**

No. 20. JOHN FOWLER & Co. (LEEDS), LTD. (Figs. 13 & 15).

This cable ploughing machine is manufactured at Leeds, in England, by John Fowler & Co. (Leeds), Ltd. Two machines are used; each is driven by a four-cylinder White & Poppe engine running at 1,000 revolutions per minute and rated at 46.0 h.p. The motor is governed by an enclosed centrifugal governor acting on a separate throttle valve in the induction pipe. The clutch is of the double-plate pattern, with "ferodo" and metal surfaces. The ploughing gear gives two speeds of  $2\frac{1}{2}$  and  $3\frac{1}{4}$  miles per hour on the cable, and there are two road speeds the same as these, on either forward or reverse. The fuel is petrol or benzol, and the tank capacity is 42 gallons. The lubricating oil tank holds 7.5 gallons, and the water tank and radiator together hold 8.75 gallons of water. The front wheels are 42 in. diameter by 9 in. wide, the rear wheels are 66 in. diameter by 16 in. wide, and the wheel-base is 147 in.

The change gear is of the epicyclic type. There are two brakes, one on the cardan shaft on a drum 10 in. diameter by  $2\frac{1}{2}$  in. wide, and one on the epicyclic gear  $19\frac{1}{2}$  in. diameter by  $2\frac{1}{2}$  in. wide. Brakes can also be fitted to the rear wheels. The ground clearance is 15 in.; the draw-gear pin for road haulage is at the height of about 2 ft. 11 in. above the ground.

The ploughing gear is driven by a cable drum  $24\frac{1}{2}$  in. diameter, using special steel 24-wire rope, Lang's lay,  $\frac{5}{8}$  in. diameter, running at either  $3\frac{1}{4}$  miles per hour or  $2\frac{1}{2}$  miles per hour, and usually hauling 5 plough-shares. The steering gear is of the "Ackermann" type, controlled by a worm and worm-wheel of 24 to 1 ratio. Reversing can be effected instantaneously by means of the epicyclic gear. The engine is carried on a special spring suspension, and an electrical self-starting gear with dynamo is provided.

The length of the tractor overall is 19 ft. 4 in., the width of the tractor overall is 7 ft. 2 in., the wheel-base is 147 in. It is stated to be capable of turning in a circle 22 ft. outside diameter, and its total weight full and in working order is 8 tons 4 cwt., of which 2 tons 18 cwt. are on the front wheels and 5 tons 6 cwt. are on the back wheels.

**McLAREN'S PATENT MOTOR WINDLASS.**

No. 31. J. & H. McLAREN, LTD. (Figs. 14 & 16).

This cable ploughing machine is manufactured at Leeds, in England, by Messrs. J. & H. McLaren, Ltd. Two machines are

used; each is driven by a four-cylinder engine running at 1,000 revolutions per minute and rated at 32.0 h.p. The motor is governed by a centrifugal governor acting on the throttle valve in the induction pipe. The clutch is of the cone type, "ferodo-lined," engaging with the fly-wheel. The change gear is of the sliding type, and gives three speeds, 1.57, 1.86 and 2.91 miles per hour on the road, and there are two ploughing speeds of 3 and 3.6 miles per hour. A differential is fitted without differential lock. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 28 gallons. The water tank and radiator together hold 10 gallons. The front wheels are 33 in. diameter by 9 in. wide, the rear wheels are 42 in. diameter by 9 in. wide, and the wheel-base is 120 in.

The brakes are as follows: road gear, a "ferodo-lined" strap brake 9 in. diameter by  $1\frac{1}{2}$  in. wide, acting on the worm spindle which gears with the worm-wheel on the main axle; ploughing gear, a "ferodo-lined" pad brake 1 ft. 6 in. long by 2 in. wide, acting on the inside of the winding drum (3 ft.  $3\frac{1}{2}$  in. diameter). The ground clearance is  $9\frac{1}{2}$  in. The ploughing gear is driven by a cable coiled on a drum 30 in. diameter, using  $\frac{7}{8}$  in. diameter cable, four strands of five wires each, plough steel wire.

The length of the tractor overall is 16 ft. 4 in., the width of the tractor overall is 6 ft. 6 in. It turns in a circle about 42 ft. outside diameter, and its total weight full and in working order is about 3 tons 14 cwt., of which about 1 ton is on the front wheels and 2 tons 14 cwt. on the back wheels.

#### CLASS VI.

##### FWLER, CLASS "DD," STEAM CABLE PLOUGH.

No. 21. JOHN FOWLER & CO. (LEEDS), LTD. (Figs. 17 & 18).

This cable ploughing engine is manufactured at Leeds, in England, by John Fowler & Co. (Leeds), Ltd. It is driven by an 8 h.p. (nominal) steam engine, having one cylinder 8 in. diameter by 12 in. stroke, running at 300 revolutions per minute, and fitted with a "Fowler" high-speed centrifugal governor. The ploughing gear gives one speed of 3.75 miles per hour at normal engine speed. The boiler is of the locomotive type, having 4.3 sq. ft. grate area and 111 sq. ft. heating surface. It is fitted with a superheater 47.7 sq. ft. area of heating surface, and has a spark arrester of the grid type. The coal-carrying capacity of the bunker is 500 lb., and the capacity of the water tank is 136 gallons; the feed is by a plunger pump, or size C "Penberthy" injector. The front wheels are 48 in. diameter by 9 in. wide, and the rear wheels 72 in. diameter by 16 in. wide, and the wheel-base is 147 in.

The change gear is of the sliding-gear type, and gives two road speeds of 2.5 and 4.9 miles per hour respectively. There is

no brake, but the regulator and reversing gear provide the equivalent. The ground clearance is 13 in., and the draw-gear pin for road haulage is at the height of 2 ft. 9 in.

The ploughing gear is driven by a cable drum 24½ in. diameter, using special steel 24-wire cable, Lang's lay, ⅝ in. diameter, running at 3.75 miles per hour, and usually hauling 5 plough-shares. Steering is by worm and wheel with chains.

The length of the tractor overall is 20 ft. 2 in., the width of the tractor overall is 6 ft. 8¼ in., and it is capable of turning in a circle 39 ft. outside diameter. Its total weight full and in working order is 11 tons 19¾ cwt., of which about 3 tons 9 cwt. is on the front wheels, and 8 tons 11 cwt. on the rear wheels.

## CLASS VII.

### CRAWLEY.

#### No. 15. CRAWLEY AGRIMOTOR CO., LTD. (Figs. 19 & 20).

This combined motor and plough is made in England by the Crawley Agrimotor Co., Ltd., at Saffron Walden. It is driven by a four-cylinder motor, having vertical cylinders running at 1,000 revolutions per minute and rated at 24.3 h.p. The motor is governed by a centrifugal governor of original and simple type, self-contained and totally enclosed. The clutch is of the cone type, "ferodo-lined" and hand-controlled. The fuel is paraffin, petrol being used for starting. The capacity of the paraffin tank is 8 gallons. The radiator is of the gilled-tube type with cast tanks, and the total water capacity of the tank and radiator is 12 gallons. The carburettor is of the "Degory No-Jet" type. No special provision is made for cleaning the intake air. There are two front wheels driving the tractor, each 48 in. diameter by 8 in. wide. No differential is fitted, but a special device for declutching either wheel is used in place of the differential for turning. A hand-wheel operating a pinion and rack slides the rear wheel across the rear of the frame for fine adjustment of steering when ploughing.

There is one brake of the cone type, "ferodo" lined, hand-controlled and acting on the propeller shaft. The front of the tractor is so constructed that the machine cannot be capsized forward by rearing when the brake is applied suddenly, even though the ploughs should be lifted clear of the ground. There are two speeds forward, 2½ miles per hour and 3½ miles per hour respectively, and one reverse of 1¼ miles per hour. The change speed is of the sliding-gear type.

The ploughs are of the Crawley Agrimotor Co.'s C.P. type, three furrows, slung under the frame of the machine. The tractor can pull a Martin or Ransome cultivator slung under the frame

of the machine, or hauled when the machine has been converted into a tractor. A special frame and wheel can be fitted in front for converting the self-contained machine into a tractor, and in this form it can be used for hauling a reaper and binder. The belt speed can be alternatively either 1,830 or 1,420 ft. per minute, according to the gear fitted, the belt pulley being 14 in. diameter by 6 in. wide. The ground clearance is 10½ in.

The length of the tractor overall is 17 ft. 6 in., the width of the tractor overall is 5 ft. 2 in. It can be turned in a circle 24 ft. outside diameter, and its weight full and in working order is 46½ cwt. The use of the declutching gear in conjunction with the reduction of load on the rear wheel when in reverse gear enables the rear of the tractor to be lifted easily clear of the ground and turned round the declutched wheel. When converted to a tractor the machine can be turned so as to cut a square corner with a binder.

#### **FOWLER "20" MOTOR PLOUGH.**

NO. 22. JOHN FOWLER & CO. (LEEDS), LTD.

This combined motor and plough is made in England by John Fowler & Co. (Leeds), Ltd., at Leeds. It is driven by a four-cylinder "Waukesha" motor with vertical cylinders running at 1,100 revolutions per minute and rated at 21.1 h.p. The motor is governed by a ball-type, totally-enclosed governor. The clutch is of the plate pattern "Borg & Beck" type. The fuel is petrol or benzol, the capacity of the petrol tank being about 10½ gallons. The radiator is of the spiral tube pattern about 53 sq. ft. area, and the capacity of tank and radiator is 5.75 gallons of water. The carburettor is of the "Zenith" type, and the intake air passes through a "Willcox-Bennett" air-cleaner. There are two front wheels driving the tractor, each 53 in. diameter by 8 in. wide. A differential gear is fitted, and also a differential lock. Steering is effected by brakes on the cross shaft or, while ploughing, by a bevel gear and worm operating on the plough frame. There is a screw arrangement for lifting or lowering either front wheel so that the plough will ride level under all circumstances. There are two brakes independently operated by foot, one on each wheel, 14½ in. diameter by 1½ in. wide.

The two-share ploughs are of Fowler's make, attached by a draw-pin and having two horizontal rollers in the rear. The tractor can pull a Fowler cultivator in place of the ploughs. For other use the plough bodies and the rear of the frame are detached. Two wheels, operated by hand steering, are then attached, making the machine into a four-wheeled tractor.

The ground clearance when ploughing is 8 in. The belt

speed is 2,300 ft. per minute, the belt pulley being 8 in. diameter by  $4\frac{1}{2}$  in. wide. There are two forward speeds, 1.9 and 3.1 miles per hour respectively, and one reverse, 1.7 miles per hour at normal engine revolutions. The speed change is of the sliding-gear type.

The length of the tractor overall with the plough is about 17 ft. 2 in., the width overall is 4 ft.  $3\frac{1}{2}$  in., and it is stated to turn in a circle of 16 ft. outside diameter. The weight of the tractor with the plough is about 41 cwt. full and in working order.

### **MARTIN 3-FURROW MOTOR PLOUGH.**

No. 30. MARTIN'S CULTIVATOR Co., LTD.

This combined motor and plough is made in England, at Stamford, by Martin's Cultivator Co., Ltd. It is driven by a four-cylinder motor having vertical cylinders running at 900 revolutions per minute and rated at 23.2 h.p. The motor is governed by a centrifugal enclosed governor fitted with an adjustable spring and controlled by a lever from the steering column. The clutch is "ferodo" lined, and acts on the inside of the engine fly-wheel. A ball-thrust washer takes the thrust of the clutch spring, and flexible couplings allow for the end movement required for operating the clutch. The fuel is paraffin, petrol being used only for starting, and there is no water injection. The capacity of the paraffin tank is  $7\frac{3}{4}$  gallons. The radiator is of the gilled-tube type, having about 38 square ft. of cooling surface, and the capacity of tank and radiator is 9 gallons of water. The carburettor is of the "Holley" type, without air-cleaner. The tractor is supported at the front by two chain tracks, each 8 in. wide, and having a length of bearing on the ground of 3 ft. 4 in. The area in contact with the ground is 320 square in. for each track, or a total of 640 square in.

The length of the tractor, with plough, overall is 18 ft., the width overall is 4 ft. 8 in. It can turn in a circle about 20 ft. outside diameter, and its weight full and in working order is about 40 cwt. The track shoes are fitted with detachable spuds capable of being fastened each by a single bolt and nut. There is one speed forward of 1.6 miles per hour, and the same in reverse. The change speed is of the sliding-gear type.

When the ploughs are in work steering is effected by hand-wheel and worm-gear. When the ploughs are out of work steering is controlled by side clutches operated by a hand-lever. A screw-gear is fitted for adjusting the relative heights of the chain tracks to suit the depth of ploughing. There is no differential. There are two shoe-brakes 8 in. diameter, pedal-operated, acting on both chain-track driving sprockets. There is a screw-gear adjustment vertically and also laterally for the draw-gear.

*The ploughs are of the three-furrow Martin type, with simple*

attachments to the self-lift and steering mechanism. A Martin self-lift tractor cultivator can be attached to the tractor in place of the plough. Binders, harrows, mowers or other implements can be drawn coupled to the tractor attachment.

The ground clearance is 13 in. The belt speed is 420 ft. per minute, the belt pulley being 18 in. diameter by 6 in. wide.

#### **MOLINE.**

##### **No. 33. MOTRAC ENGINEERING, LTD. (Figs. 21 & 22).**

This combined motor and plough is manufactured at Moline, Ill., in the United States of America. It is driven by a four-cylinder motor having vertical cylinders running at 1,300 revolutions per minute and rated at 20.7 h.p. It is governed by a magnetic plunger governor working in a dash-pot with oil. "Remy" ignition is fitted with "Willard" accumulators and a self-starter.

The clutch is of the "Borg & Beck" dry-plate type, raybestos to steel. The carburettor is of the "Ensign Paraffin" type. The fuel is paraffin, petrol being used for starting. The capacity of the paraffin tank is 12 gallons. The radiator is of the "Modine-Spirex" type, the intake air being passed through a "Bennett" dry air-cleaner, and the capacity of the tank and radiator is 4 gallons of water.

The front driving wheels are 52 in. diameter by 8 in. wide, or with extension rims 14 in. wide. There is one forward speed of 2 to 5 miles per hour, regulated by the engine speed, and there is one reverse speed of 1 to 3 miles per hour. There are two hand-brakes 9 in. diameter, raybestos-lined acting on the differential shafts. A differential lock is fitted.

The plough is of the "Moline" three-furrow type, secured by three detachable pins. Any type of cultivator or any make of binder can be attached in the same manner by three detachable pins, the tractor being arranged with rear carriage fittings and two detachable pins, and with an extension for the gear, clutch and steering controls.

The belt speed is 2,580 ft. per minute, the belt pulley being 9 in. diameter by 6½ in. wide. There is a gear for raising and lowering one wheel by means of a ratchet catch and an adjusting arm lowered by the weight of the tractor and raised by the power of the engine. Steering is by rack and pinion. The ground clearance is 29 in.

The length of the tractor overall, without the plough, is 5 ft. 6 in., and the width of the tractor overall is 4 ft. 6 in. It is capable of turning in a circle 32 ft. outside diameter, and the total weight of the tractor with plough is 39½ cwt. full and in working order.

**BOON.****No. 38. RANSOMES, SIMS & JEFFERIES, LTD.**

This combined tractor and plough is manufactured in England, at Ipswich, by Ransomes, Sims & Jefferies, Ltd. It is driven by a two-cylinder motor having vertical cylinders running at 800 revolutions per minute and rated at 20.0 h.p. It is governed by a centrifugal governor driven by spiral gears from the camshaft and operating on the throttle. The clutch is of the internal cone type, lined with ferodo. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 10 gallons. The radiator is of the gilled-tube type, having about 90 square ft. of total surface, and the capacity of the tank and radiator is 10 gallons of water. The carburettor is of the "Zenith" type, and the intake air is filtered through fine copper gauze. The two front (driving) wheels are 52 in. diameter by a normal width of 9 in., but capable of being increased to 15 in. by extensions.

There are two brakes fitted to the hubs of the driving front wheels, 18 in. diameter by  $2\frac{1}{2}$  in. wide, with "ferodo" lined bands, operated by foot. There are two forward speeds, 2.1 and 2.7 miles per hour, and one reverse speed of 1.9 miles per hour. There is a differential gear, but no differential lock. Steering is effected by a hand-wheel acting through a worm and wheel on a wheel and rack.

The plough is a three-furrow Ransomes, Sims & Jefferies, bolted to the under-carriage in such manner as to allow of sideway adjustment and of depth adjustment. It is fitted with a self-lifting device. A Ransomes nine or eleven times self-lift cultivator can be bolted to the under-carriage. The plough can be detached by removing six bolts. The tractor is then ready for the road. The under-carriage carries the back wheels, which are the furrow and land wheels when ploughing. The ground clearance is 13 in. The belt speed may be either 2,200 ft. per minute or 1,880 ft. per minute, the belt pulley being either  $10\frac{1}{2}$  in. diameter by 5 in. wide, or 9 in. diameter by 6 in. wide, respectively.

The length of the tractor overall is 14 ft., or with the plough 16 ft., the normal width overall is 5 ft.  $4\frac{1}{2}$  in., or with the extensions 6 ft.  $4\frac{1}{2}$  in. It is capable of turning in a circle 24 ft. outside diameter, and the weight is about 52 cwt. full and in working order.

**SANTLER.****No. 39. C. SANTLER & Co., LTD.**

This combined tractor and plough is a double-ended machine operated by two attendants and ploughing two furrows. It is

driven by a two-cylinder engine running at a normal speed of 800 revolutions per minute and rated at 15.6 h.p. The clutch is of the cone type. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 5 gallons. The driving wheels are 50 in. diameter by 9 in. wide, and 50 in. diameter by 12 in. wide, respectively, with steering wheels 24 in. diameter by 6 in. wide. The machine is reversed at each end of the field, and driven by the other attendant in the opposite direction without turning.

There is one brake of the band type. The front wheel is spring mounted. There are two speeds; the speed change is of the sliding-gear type. The weight of the machine in working order is about 49 cwt., of which about 41 cwt. is on the driving wheels and 8 cwt. on the steering wheel.

#### JUDGES' REPORT.

The comparing of the performance of agricultural tractors is a much more complex matter than that of tractors intended primarily for use on the road. The latter are designed, usually, for a single purpose, and although required to negotiate gradients as steep as 1 in 4 and to run in all weather conditions over both good and poor roads, they are not expected to perform the various duties required of the farm tractor. This comparatively new class of vehicle must be capable of running not only on a hard road, but on soft land; it must be able to do the work of the horse in ploughing, cultivating, harrowing and harvesting, and to replace the hired portable engine in the operations of threshing and driving barn machinery, and occasionally also to serve as a tractor for hauling a loaded wagon or farm implement from place to place. Furthermore, it may be used in remote parts of the country, often far from well-equipped workshops, and it must be driven by ordinary farm labour, a large proportion of which is not yet educated in the treatment of a class of machinery essentially different from those agricultural implements with which the farm hand is already familiar. Like the road tractor, it must work in all weathers, but with the additional disadvantage that it must often be left out at night, sheeted down.

When all these diverse conditions have to be met by a class of machine of quite recent development, it is remarkable, and highly creditable to the manufacturers, that of so large a number of entries as forty-six, as many as thirty-eight should have been presented for the trials, and as few as two only should have retired during their progress. This uniformity of excellence very



greatly increased the difficulties of judging, and it would have required extreme uniformity in the general conditions of the trials to permit of attempting to arrange the tractors in order of merit, whether for area ploughed per hour, for fuel consumption (or cost of fuel per acre), for drawbar pull, for adaptability to the driving of machinery, or even for mechanical design. In the larger classes several tractors were nearly of equal merit. But, taking into account all the conditions laid down by the Society, there was no difficulty in selecting the prize-winners under these conditions, and the Judges' decisions were unanimous.

Taking the work of Class 2, the largest class (not exceeding 30 h.p., and hauling a three-furrow plough), all possible precautions appeared to have been taken to secure uniformity. The ploughs were all of one pattern, made by an independent manufacturer and adjusted by the firm's own men. The field, which appeared uniform, was of large size, and had been the landing-ground of the aerodrome. Before a start was made on the first day (September 28) a competitor discovered that a compass-ring, a large circle cut in the ground and filled in with clinker and chalk, would come partially into his work, and he was transferred to another plot. Another competitor was less fortunate, for although no trace of its existence was visible on the surface, in the course of his work the plough encountered the remains of a hedge which had been cut down below the level of the field, and filled and levelled carefully so as to ensure the smooth surface required for the landing-ground of an aerodrome. This machine succeeded in making cuts through part of the buried hedge, but when all three ploughshares became engaged with stumps of wood up to  $1\frac{1}{2}$  in. diameter it was brought to a standstill. Such instances, of course, were duly allowed for, and had no effect in diminishing the credit due to the competitor. Even in this ideal field some differences in depth of soil were found, and it was not possible to get all the ploughs down to the same depth, because in some parts of the field the depth of ground was not sufficient. Making due allowance for this, the tractive effort required to haul the ploughs varied little over the whole area. All competitors were easily able to perform their work on this field.

On the third day (September 30) the same class was put to work, part on medium land and part on heavy land. None of the tractors had trouble with the medium land, but on the heavy land a new difficulty was encountered. This field was of stiff clay, very heavy, and described as 6-horse. Firstly, it had never been ploughed as deep as it was necessary to go in order to load the tractors fully, and secondly, although in appearance the same, the dynamometer revealed that the mean draw-bar pull for the ploughs varied from 2,300 lb. to 3,400 lb. (770 lb. to 1,130 lb. per

share) in different parts of the field. Nor was this all, for an irregular zone of stiffer land ran obliquely across part of the field, affecting only some of the tractors, which were exercising as great a draw-bar pull for two ploughs as other machines were for three furrows in another part of the field.

Conditions were approximately equalized by changing the positions of the tractors from one part of the field to another. When rain had fallen the mean draw-bar pull was reduced by about 15 per cent, because the cutting quality of this particular clay was improved; but the conditions of adhesion became more difficult.

#### *Equivalent Acres.*

To compare the figures of fuel consumption, allowing for the inevitable differences in draw-bar pull, it is convenient to assume that a standard draw-bar pull per plough-share is 500 pounds, and then to reduce the observed pull and acres ploughed by this figure. The term "equivalent acres" means, therefore, the number of acres that would have been ploughed if the draw-bar pull had remained constant at 500 pounds per plough-share, estimated from the actual draw-bar pull observed and the actual area ploughed.

In addition, therefore, to the practical information obtained by a comparison of the actual draw-bar pulls and the actual acres ploughed, the Judges had before them figures of comparison calculated to show what the results would have been if the resistance at every plough-share had remained constant at 500 pounds.

Thus in the case of light land taking a minimum draw-bar pull of 670 lb. for two ploughs (335 lb. per plough), the equivalent acre was only two-thirds of the actual acre, whereas in the case of the heavy land having a maximum draw-bar pull of 6,250 lb. for five shares (1,250 lb. per plough),  $2\frac{1}{2}$  equivalent acres would have been ploughed for each actual acre. A standard depth was also taken for the furrow. The records of the actual depths ploughed were then examined, and if the mean actual depth over the whole plot exceeded the depth ploughed while the dynamometer record was being obtained, this fact was taken into consideration.

The trials of Class 1 (not exceeding 24 h.p. and hauling a two-furrow plough) on light land, on the second day (September 29), on the aerodrome, showed that all the competitors were easily capable of performing their tasks; but in this case also there was found to be considerable difference in the draw-bar pull, which varied from a minimum of 335 lb. per share to a maximum of 565 lb. per share. Here, again, it was necessary to make allowance for the variation.

The work allotted to Classes 3 and 5 in their respective fields on light land was performed with great ease.

In each of the Classes 4 and 6 there was only one competitor, and therefore it was unnecessary to obtain any comparative figures, the work being performed satisfactorily.

Class 7, working on light land in a grass field near the aerodrome, had generally an easy task, but in this class of self-contained motors and ploughs the ploughs differed, and trouble was experienced in one case in clearing the plough. Owing to the impossibility of inserting the dynamometer between the tractor and the plough no records could be made of the pull required in this class. A competitor in this class retired.

In Classes 1 and 5, working on heavy land, it was necessary to apply corrections for variation in draw-bar pull in the manner already described for Class 2.

In the trial of Class 3, working on heavy land, one of the competing tractors unfortunately got ditched and was unable to complete the task for the day, but it was able subsequently to take part in the road test for hill climbing.

#### *Cost of Ploughing.*

These figures have been reduced to cost in pence per acre on a uniform basis of 18*d.* per hour for each attendant.

The results for the ploughing trials have been combined in Table III, which shows the minimum and maximum times taken to plough an acre for each class on each kind of land, as well as the average for the five best examples for each of the classes in which there were as many as five machines competing.

The fuel used has been taken per actual acre ploughed, and where comparisons have been made on the basis of equivalent acres the figures so obtained are also given for minimum and maximum consumption, and for the average of the five best tractors in each class. The prices of paraffin, 1*s.* 11*d.* per British gallon, and petrol, 3*s.* 11*d.*, less 6*d.* excise refund, or 3*s.* 5*d.* net per gallon, have been taken in calculating the costs per actual or equivalent acre. In making any comparison it must be remembered that the figures for equivalent acres reduce the draw-bar pull to that which would be obtained on light land.

The coal used by the tractors in Classes 4 and 6 was supplied at the price of 44*s.* 6*d.* per ton.

The figures for the total costs given in Table III have been taken on the actual acres ploughed, and represent the total per acre for the items of attendant and fuel only, calculated on the net ploughing time, and on the total fuel used.

*Miscellaneous Trials.*

Uphill ploughing trials were made, on October 4 and 5, with certain selected tractors on hill land that had become wet. In some cases slipping of the wheels or tracks occurred, but not of sufficient amount to prevent any of the tractors from climbing while performing the work.

Brake tests for distance of stopping were made with each of these tractors, with the plough raised, running down the hard, unploughed surface. These trials showed that tractors with small brake power, or even with no brake equipment whatever, could be brought to rest, but the distance required for a stop in the case of a brakeless tractor was very much greater than in the case of those that were equipped with brakes.

Selected tractors were tested for coming into position, putting on the belt and driving a pulley dynamometer. The time was taken from the commencement of the operation of coming into line until 16 h.p. was recorded. The time required by tractors with the fore-and-aft drive, with which the majority were fitted, varied from a minimum of 2 minutes to a maximum of 30 minutes. The tractors fitted with the drive across did not attain either of these figures, taking from a minimum of 3 minutes to a maximum of 12 minutes respectively, and no evidence was obtained as to any material advantage of the one system over the other so far as getting into position was concerned, though the difficulty of tightening the belt drive is, of course, much greater.

The tractors in Classes 1 and 2 were subjected to a test for obtaining the outside diameter of the turning circle. The data obtained varied from a minimum of 13 ft. to a maximum of 36 ft. Ability to turn completely in the headland, and to be able to return down the field in the same line that was taken coming up, would be greatly appreciated by farmers in the operations of drilling, cultivating and harrowing. The nearest approach to this was found in some of the chain-track machines, which were capable of turning in about their own length.

Hill-climbing tests on the road were made, on October 5 and 6, with certain selected tractors hauling a wagon loaded with 4 tons. The point at which the gradient proved too steep for the tractor to negotiate was recorded, and the gradient at this part measured. Five of the tractors succeeded in pulling the full load up a gradient exceeding 1 in 7.4. These trials do not admit of establishing an arrangement in order of merit, because the stoppages were generally not due to stalling of the engines, but to insufficient adhesion. Those tractors that were provided with rubber pads showed the advantage obtained by the increased grip on the road surface.

On October 6, trials were made at the desire of some of the farmers, who had found considerable difficulty in hauling a reaper and binder by a tractor so as to leave the standing corn with a nearly square corner. It was found very difficult to get the drivers to appreciate how they were to deal with the temporary marks put up to represent standing corn, but it was shown generally that those tractors that could turn in a circle of 25 ft. diameter could bring the reaper and binder round so that practically no curve was left by the reaper at the corner. Some difficulties occurred in turning when the draw-gear connection was not placed sufficiently far behind the rear axle, parts of the implement preventing the full lock from being taken.

#### *General Observations.*

Of the thirty-six tractors that completed the trials, four were supported on chain-tracks, and in these no case was recorded of jamming by stones or other matter. For work on wet clay, spuds or grouseers were used, which could be removed for running on the road.

Among general features it is to be noted that all the American or Canadian tractors used paraffin as fuel. Four tractors of British or Continental manufacture used petrol alone, and two were steam-driven, using coal as fuel.

The preliminary use of petrol for starting was usual in the paraffin motors, and a special heating device, formed as a jacket on the exhaust pipe, was commonly fitted. An impulse starter was generally fitted to the magnetos of the American or Canadian engines. Two tractors were fitted with self-starters, and carried accumulators and electric motors for starting, and another was fitted with a compressed-air starter. None of these devices gave trouble during the trials.

Mention may be made of a special feature in the Ricardo engine which was fitted to the Peterbro' tractor, namely, the simple device of turning a small portion of the exhaust gas direct into the carburettor, thereby warming the intake air and (according to certain authorities) diminishing the tendency to "pink." This enables the engine to run at full load without the necessity of injecting water into the cylinder. Trunk pistons were also fitted to this engine, and in the opinion of the mechanical Judges, the engine stood quite in a class by itself, both as regards novelty and robustness of design.

Mention may be made of a type of carburettor very usual in America, but little known in England, fitted on the self-propelled Moline plough. A small fraction of the fuel oil, probably of the heavier fractions of the paraffin, contained in the incoming air is allowed to trickle unvaporised into a pocket in the carburettor.

In this pocket is a sparking plug which is operated from the Remy ignition. A supplementary supply of air is introduced into this pocket, with the result that there is continual combustion in the pocket of the small fraction of the charge which finds its way there, and the heat produced is used to raise the temperature of the charge and vaporise the fuel. The burnt gas from this small pocket furnace enters the cylinder with the charge.

Owing to the considerable advance in the perfecting of paraffin carburettors, the Judges were agreeably impressed by the absence of smoke clouds either when running under load or when running light. It was quite exceptional, even when reviewing the whole field, to observe such a thing as a really dirty exhaust.

Many of the tractors were fitted with either dry-separators or water-washing arrangements for cleaning the intake air. These cleaners were intended for preventing stoppage or trouble in harvesting, or in doing work under conditions where dust and chaff are liable to be drawn into the induction pipe. As no harvesting trials were made, the efficiency of these appliances could not be compared.

The governors fitted to the engines worked satisfactorily in practically all cases, but circumstances showed that it is necessary that their action should be supplemented by a hand-throttle for enabling the speed to be reduced when turning at the headlands or when manoeuvring.

Many of the tractors were fitted with an indicating device to show that the oil-level in the crank case had not fallen below the safe working level, the usual form being a wire connected to a plunger operated by the oil pump and spring controlled.

Boiling of the water in the radiator occurred only in one or two cases.

In a few instances where the wheels came near the frames there was some tendency to clogging, particularly on land foul with grass.

The weather was very wet during the latter days allotted to the ploughing of the heavy land, and the trials were carried on under somewhat unpleasant conditions. Generally, however, we consider the ploughing conditions of the heavy land, though possibly somewhat severe, were quite favourable for a fair trial.

The Judges desire to express their appreciation of the work done by the National Physical Laboratory in producing the Dynamometer used in the trials, and for the valuable help given by Mr. J. H. Hyde and his assistants in working the apparatus and obtaining the records.

The Judges wish to record their thanks to the Observers who

carried out their arduous duties under conditions that frequently involved great discomfort and, in several instances, very hard work extending over many consecutive hours.

The Judges desire to express their appreciation of the good services rendered by the Stewards: The Hon. J. E. Cross, Mr. U. Roland Burke and Mr. H. Scott Hall, and by the Staff.

The Judges made the awards as stated on page 6 above.

The Judges give three tables showing :—

I.—An alphabetical arrangement of the names by which the tractors were known, with the numbers and names of Entrants for facilitating reference (p. 45).

II.—Dimensions, rating, speeds, and other makers' particulars furnished by the Entrants, but corrected wherever inaccuracies were found and supplemented (pp. 46 to 55).

III.—Speed of ploughing, fuel consumption and costs per acre (p. 56).

The Judges add the following Appendices :—

I.—Particulars of the ploughs used in the trials.

II.—A description, by Mr. J. H. Hyde, of the dynamometer made by the National Physical Laboratory and used in the trials.

III.—A note giving the views of Mr. Evens, who farms in the Aisthorpe district, and of Mr. Howkins, who has had considerable experience of farming by tractors.

The Judges feel that the R.A.S.E. is much indebted to the Society of Motor Manufacturers and Traders for all the valuable time and work which its members have given in co-operating in the arrangements for carrying out the trials. It is to be hoped that much good has been done to agriculture and to the motor tractor industry by the two Societies working in conjunction with one another.

W. E. DALBY.	HARRY W. BUDDICOM.	W. R. FIELDSSEND.
F. W. LANCHESTER.	R. M. GREAVES.	B. HOWKINS.
L. A. LEGROS.	BAYNTUN HIPPISELY.	HENRY OVERMAN.
H. RIAL SANKEY.	DUNBAR KELLY.	FRED SCORER.

*Judges.*

No.	Class	Name of Tractor	Comptroller	Maker	Town	Country
5	1	Austin	Austin Motor Co., Ltd.	Austin Motor Co., Ltd.	Birmingham	England
6	2	Austin	Austin Motor Co., Ltd.	Public Works, Dallas, Texas, U.S.A.	Birmingham	England
7	3	Blackstone	Blackstone & Co., Ltd.	Blackstone & Co., Ltd.	Blackburn	England
8	4	Boon	Ransomes, Sims & Jeffries, Ltd.	Ransomes, Sims & Jeffries, Ltd.	Stanford	England
38	7	Boon	Ransomes, Sims & Jeffries, Ltd.	Ransomes, Sims & Jeffries, Ltd.	Ipworth	England
39	8	British Wallis	British Motor Co., Ltd.	British Motor Co., Ltd.	London	England
4	2	Case	Aucma Motor Co., Ltd.	Aucma Motor Co., Ltd.	Lincoln	England
12	1	Case "10-18"	J. I. Case Threshing Machine Co. (P. J. J. Woodward, Representative)	J. I. Case Threshing Machine Co.	Lincoln	Wis., U.S.A.
13	2	Case "15-27"	J. Woodward, Representative	J. I. Case Threshing Machine Co.	Radnor	Wis., U.S.A.
14	2	Chase	Chase Tractors Corporation, Ltd.	Chase Tractors Corporation, Ltd.	Toronto	Canada
15	2	Chase	H. G. Burford & Co., Ltd.	Chase Tractors Corporation, Ltd.	London	England
16	2	Chase	H. G. Burford & Co., Ltd.	Cleveland Tractor Co.	Cleveland	Ohio, U.S.A.
17	2	Crawley	Crawley Agrimotor Co., Ltd.	Crawley Agrimotor Co., Ltd.	Saffron Walden	England
32	2	E-B	Matchless Armstrong & Dessau (London), Ltd.	Matchless Armstrong & Dessau (London), Ltd.	Stockport	Engl., U.S.A.
33	2	E-B	Matchless Armstrong & Dessau (London), Ltd.	Matchless Armstrong & Dessau (London), Ltd.	Stockport	Engl., U.S.A.
19	1	Fordson	Ford Motor Co., Ltd.	Ford Motor Co., Ltd.	Toronto	Canada
20	5	Fowler Motor Cable	John Fowler & Co. (Leeds), Ltd.	Henry Ford & Son, Ltd.	Cork	Ireland
21	5	Fowler Motor Cable	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds), Ltd.	Leeds	England
22	5	Fowler Motor Cable	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds), Ltd.	Leeds	England
23	7	Fowler "250" Motor Plough	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds), Ltd.	Leeds	England
24	1	Garner	Henry Garner, Ltd.	Henry Garner, Ltd.	Leeds	England
34	2	G-O	Noyes, Stockwell & Co., Ltd.	General Ordnance Co.	Derry	Conn., U.S.A.
45	2	Glasgow	Wallace Farm Implements, Ltd.	Wallace Farm Implements, Ltd.	Rapids	Scotland
2	2	Hart-Parr "30"	Agricultural Wholesale Society, Ltd. (Co-operative)	Hart-Parr Co.	Glasgow	Iowa, U.S.A.
27	3	Lawn "15-30"	John I. Austin Mfg. Co.	John I. Austin Mfg. Co.	New Holstein	Wis., U.S.A.
31	4	McLaren Motor Cable	J. & H. McLaren, Ltd.	J. & H. McLaren, Ltd.	Leeds	England
32	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
33	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
34	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
35	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
36	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
37	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
38	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
39	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
40	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
41	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
42	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
43	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
44	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
45	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
46	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
47	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
48	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
49	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
50	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
51	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
52	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
53	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
54	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
55	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
56	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
57	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
58	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
59	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
60	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
61	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
62	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
63	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
64	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
65	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
66	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
67	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
68	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
69	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England
70	4	Maan Steam Tractor	Maan's Patent Steam Cart & Wagon Co., Ltd.	Maan's Patent Steam Cart & Wagon Co., Ltd.	Leeds	England



TABLE II (continued on opposite page)

## WHEELED AND C

No.	Name of Competitor.	Name of Tractor.	Cou on
<b>CLASS 1</b>			
3	Ancona Motor Co., Ltd.	British Wallis	Engla
5	Austin Motor Co., Ltd.	Austin	Engla
12	J. I. Case Threshing Machine Co.	Case "10-18"	U.S.A.
19	Henry Ford & Son, Ltd.	Fordson	Irelan
23	Henry Garner, Ltd.	Garner	U.S.A.
24	General Motors, Ltd.	Samson, Model M	U.S.A.
42	Saunderson Tractor and Implement Co., Ltd.	Saunderson Junior	Engla
<b>CLASS 2</b>			
1	Agri-tractor Contract Co., Ltd.	Parrett	U.S.A.
2	Agricultural Wholesale Society, Ltd.	Hart-Parr "30"	U.S.A.
4	Ancona Motor Co., Ltd.	British Wallis	Engla
6	Austin Motor Co., Ltd.	Austin	Engla
13	J. I. Case Threshing Machine Co.	Case "15-27"	U.S.A.
14	Chase Tractors Corporation, Ltd.	Chase	U.S.A.
16	Fairbanks, Morse & Co., Ltd.	Twin City	U.S.A.
17	Fiat Motors, Ltd.	Fiat	Italy
29	Martin's Cultivator Co., Ltd.	Martin Tractor	Engla
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	(L.-B.) Emerson-Brantingham	U.S.A.
34	Noyes, Stockwell & Co., Ltd.	(G.-O.) General Ordnance	U.S.A.
36	Peter Brotherhood, Ltd.	Peterbro'	Engla
37	Pick Motor Co.	Pick	Engla
41	Saunderson Tractor and Implement Co., Ltd.	Saunderson, Model G	Engla
45	Wallace Farm Implements, Ltd.	Glasgow	Scotla
46	W. Weeks & Son	New Simplex	Engla
<b>CLASS 3</b>			
7	Fabrique d'Automobiles, Berna, S.A.	Berna	Switz
27	John Lauson Manufacturing Co.	Lauson 15-30	U.S.A.
<b>CLASSES 1 and 2. Chain-tracks</b>			
8	Blackstone & Co., Ltd.	Blackstone	Engla
10 & 11	H. G. Burford & Co., Ltd.	Cletrac	U.S.A.
<b>CLASS 4</b>			
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	Mann's Light Steam Agricultural Tractor	Engla
<b>CLASS 5</b>			
21	John Fowler & Co. (Leeds), Ltd.	Class "DD" Cable Ploughing Engines	Engla
<b>CLASS 6</b>			
20	John Fowler & Co. (Leeds), Ltd.	Motor Cable Ploughing Engines	Engla
31	J. & H. McLaren, Ltd.	McLaren's Patent Motor Windlass	Engla
<b>CLASS 7</b>			
15	Crawley Agrimotor Co., Ltd.	Crawley	Engla
22	John Fowler & Co. (Leeds), Ltd.	Fowler "20" Motor Plough	Engla
30	Martin's Cultivator Co., Ltd.	Martin 3-Furrow Motor Plough	Engla
33	Motrac Engineering, Ltd.	Moline Universal	U.S.A.
38	Ransomes, Sims & Jefferies, Ltd.	"Boon" Motor Plough	Engla
39	C. Santler & Co., Ltd.	Santler	Engla

Except where otherwise stated the data in this Table are the

(continued on next page) TABLE II.

## TRACTORS.

No. of Cylinders	Diam. of Cylinders	Strokes	Normal revs. per min.	Governor	Clutch	No.
	in.	in.				
4	4-25	5-75	875	Auto.	3-disc	3
4	3-75	5-00	1,200	Auto.	Cone	5
4	3-875	5-00	1,050	Auto.	Expanding	12
4	4-00	5-00	1,000	None	17-disc	19
4	4-25	5-50	900	Auto. Var.	Plate	23
4	4-00	5-50	1,000	Auto.	19-disc	24
2	5-00	6-50	950	Auto.	Cone	42
4	4-25	5-50	1,000	Auto.	3-disc	1
2	6-50	7-00	750	Auto.	Contracting	2
4	4-25	5-75	875	Auto.	3-disc	4
4	3-75	5-00	1,500	Auto.	Cone	6
4	4-50	6-00	900	Auto.	Expanding	13
4	4-25	5-50	950	Auto.	Expanding	14
4	4-25	6-00	1,000	Auto.	1-disc	16
4	4-25	5-50	900	Auto.	Multi-disc	17
4	4-75	5-00	900	Auto. Var.	Cone	20
4	4-75	5-00	900	Auto.	Cone	32
4	4-50	5-75	955	Auto.	Friktion	34
4	4-75	5-50	900	Auto.	Cone	36
4	4-50	5-00	800	—	Cone	37
2	5-50	8-00	750	Auto.	Cone	41
4	4-125	5-25	1,150	Auto.	Cone	45
4	4-25	5-75	900	Auto.	Disc	46
4	4-75	5-00	1,000	Auto.	Cone	7
4	4-75	6-00	950	Auto.	Expanding	27
3	5-00	6-5	750	Auto. Var.	Cone	8
4	4-00	5-5	1,000	Auto. Var.	Disc	10& 11
					Gear Change	
2	{ 4-0 6-375 }	8-0	450	Auto. spring loaded centrifugal	Sliding pinion	28
1	8-0	12-0	300	Auto. high speed centrifugal	Sliding gear	21
					Clutch	
4	mm. 127	mm. 180	1,000	Auto. encl. centrifugal	2-plate	20
4	120	140	1,000	Auto. centrifugal	Cone	31
4	in. 4-125	in. 5-25	1,000	Auto. centrifugal	Cone	15
4	3-75	5-25	1,100	Auto. centrifugal	Dry plate	22
4	4-25	5-5	900	Auto. and control	Cone	30
4	3-5	5-0	1,300	Magnetic control	Dry plate	33
2	5-25	7-0	800	Auto. centrifugal	Cone	38
2	5-0	6-0	800	—	Cone	39

by the Entrants, checked and corrected where errors have been found.

TABLE II (continued from previous page).

TABLE II (continues from previous pages)						WHEELED AND GEAR	
No	Name of Competitor	Tractor Speeds: Forward and Reverse at normal revs.				Gear <sup>2</sup> 1st to 1	
		1st m.p.h.	2nd m.p.h.	3rd m.p.h.	Rev. m.p.h.		
CLASS 1							
3	Ancona Motor Co., Ltd.	2.5	3.5	—	2.5	52-1	
5	Austin Motor Co., Ltd.	2.45	4.3	—	1.9	60-8	
12	J. I. Case Threshing Machine Co.	2.25	3.6	—	—	59-0	
19	Henry Ford & Son, Ltd.	1.5	2.75	6.75	2.5	84-3	
23	Henry Garner, Ltd.	1.67	2.67	5.2	1.7	63-7	
24	General Motors, Ltd.	2.0	3.0	—	1.0	64-0	
42	Saunderson Tractor and Implement Co., Ltd.	1.75	3.0	—	3.0	64-2	
CLASS 2							
1	Agri-tractor Contract Co., Ltd.	1.75	2.38	4.0	1.8	100-0	
2	Agricultural Wholesale Society, Ltd.	2.0	3.0	—	1.5	58-6	
4	Ancona Motor Co., Ltd.	2.5	3.5	—	2.5	52-1	
6	Austin Motor Co., Ltd.	3.08	5.36	—	2.4	60-8	
13	J. I. Case Threshing Machine Co.	2.25	3.0	—	1.75	62-0	
14	Chase Tractors Corporation, Ltd.	1.50	2.5	—	1.5	91-7	
16	Fairbanks, Morse & Co., Ltd.	2.2	2.9	—	1.75	69-0	
17	Fiat Motors, Ltd.	2.0	3.0	4.0	2.5	74-0	
29	Martin's Cultivator Co., Ltd.	1.75	2.5	3.63	2.25	77-0	
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	1.81	2.33	—	1.81	76-0	
34	Noyes, Stockwell & Co., Ltd.	2.2-4	2.8-3.2	3.6-4	—	—	
36	Peter Brotherhood, Ltd.	1.87	2.6	—	1.5	80-0	
37	Pick Motor Co.	—	—	—	—	66-6	
41	Saunderson Tractor and Implement Co., Ltd.	1.63	2.13	4.25	2.12	70-0	
45	Wallace Farm Implements, Ltd.	2.5	4.5	—	2.75	53-0	
46	W. Weeks & Son.	1.5	2.5	4.25	1.25	75-6	
CLASS 3							
7	Fabrique d'Automobiles, Berna, S.A.	1.0	2.0	6.25	1.5	—	
27	John Lauson Manufacturing Co.	1.75	2.5	—	1.6	90-0	
CLASSES 1 and 2. Chain-tracks							
8	Blackstone & Co., Ltd.	1.86	2.8	3.68	1.5	25-7	
10 & 11	H. G. Burford & Co., Ltd.	2.5-4.0	—	—	1.3-2.0	23-2	
Tractor Speeds.							
Gear reduction m							
Forward Forward Reverse Forward Forward							
CLASS 4							
25	Mann's Patent Steam Cart and Wagon Co., Ltd.	2.3	3.5	5.0	30.7	19-3	
CLASS 6							
21	John Fowler & Co. (Leeds), Ltd.	2.5	4.6	—	25.9	13-1	
CLASS 5							
20	John Fowler & Co. (Leeds), Ltd.	2.1	3.3	—	64.2	61-0	
31	J. & H. McLaren, Ltd.	1.57	1.86	2.0	80.0	67-0	
Forward Forward Reverse Forward Forward							
CLASS 7							
15	Crawley Agrimotor Co., Ltd.	2.5	3.75	1.25	56	41	
22	John Fowler & Co. (Leeds), Ltd.	1.83	3.1	1.71	94	57	
30	Martin's Cultivator Co., Ltd.	1.6	—	1.6	11.9	—	
33	Motrac Engineering, Ltd.	2.0	to 5.0	3.0	77	By engine	
38	Ransomes, Sims & Jeffries, Ltd.	2.14	2.74	1.92	60	47	
39	C. Santler & Co., Ltd.	—	—	—	25	15	

Except where otherwise stated the data in this Table are 2

(continued on next page) TABLE II.

## TRACTORS.

Fuel used for							No.
Rev. to 1	starting	running	Final Drive				
52-1	Petrol	Paraffin	Worm and wheel				3
78-2	Petrol	Paraffin	Spur gear				5
—	Petrol	Paraffin	Pinion and ring				12
47-8	Petrol	Paraffin	Worm and wheel				19
61-3	Petrol	Paraffin	Worm and wheel				23
140-0	Petrol	Paraffin	Pinion and ring				24
37-0	Petrol	Paraffin	Pinion and ring				42
95-0	Petrol	Paraffin	Pinion and ring				1
78-4	Petrol	Paraffin	Pinion and ring				2
52-1	Petrol	Paraffin	Worm and wheel				4
78-2	Petrol	Paraffin	Spur gear				6
70-0	Petrol	Paraffin	Pinion and ring				13
91-7	Petrol	Paraffin	Pinion and ring				14
84-0	Petrol	Paraffin	Pinion and ring				16
58-0	Petrol	Paraffin	Worm and wheel				17
80-0	Petrol	Paraffin	Pinion and wheel				20
76-0	Petrol	Paraffin	Pinion and ring				32
—	Petrol	Paraffin	Pinion and wheel				34
108-5	Petrol	Paraffin	Pinion and ring				36
—	Petrol	Petrol	Worm and wheel				37
49-5	Petrol	Paraffin	Pinion and ring				41
47-0	Petrol	Paraffin	Bevel gear				45
88-2	Petrol	Paraffin	Pinion and ring				46
—	Petrol	Petrol	—				7
100-0	Petrol	Paraffin	Pinion and ring				27
31-7	Paraffin	Paraffin	Pinion and ring				8
30-0	Petrol	Paraffin	Pinion and ring				10 & 11
Boiler Type	Boiler Details				Pump	Injector	
	Boiler Pressure lb. per sq. in.	Grate Area sq. ft.	Heating Surface sq. ft.	Super-heater Surface sq. ft.			
Locomotive	200	3-0	57-5	None	Slow	Penberthy	28
Locomotive	180	4-3	Total 111	47-7	Plunger	Penberthy	21
Self Starter	Fuel used for starting		Fuel used for running		Final Drive		
Electric	Petrol Petrol		Petrol Paraffin		Pinion and ring Worm and wheel		
—	Petrol		Paraffin		Pinion and ring		
—	Petrol		Paraffin		Pinion		
Remy	Petrol		Paraffin		Pinion and ring		
—	Petrol		Paraffin		Pinion and ring		
—	Petrol		Paraffin		Pinion and ring		

The Entrails, checked and corrected where errors have been found.

TABLE II (continued from previous page).

## WHEELED AND

No.	Name of Competitor	Belt Drive			
		Direction	Pulley Width	Pulley Dia.	Revs. per min.
CLASS 1					
3	Ancona Motor Co., Ltd.	With	In.	In.	430
5	Austin Motor Co., Ltd.	With	6-75	18-0	360
12	J. I. Case Threshing Machine Co.	With	5-0	24-0	1,050
19	Henry Ford & Son, Ltd.	With	6-5	9-5	1,000
23	Henry Garner, Ltd.	With	8-25	8-25	900
24	General Motors, Ltd.	With	6-0	18-0	375
42	Saunderson Tractor and Implement Co., Ltd.	With	6-5	12-0	950
CLASS 2					
1	Agri-tractor Contract Co., Ltd.	With	7-5	12-0	1,000
2	Agricultural Wholesale Society, Ltd.	With	8-0	14-0	750
4	Ancona Motor Co., Ltd.	With	6-75	18-0	430
6	Austin Motor Co., Ltd.	With	5-0	24-0	450
13	J. I. Case Threshing Machine Co.	With	6-5	16-0	900
14	Chase Tractors Corporation, Ltd.	With	8-0	10-0	950
16	Fairbanks, Morse & Co., Ltd.	Across	6-5	16-0	645
17	Fiat Motors, Ltd.	With	6-5	13-0	540 max.
29	Martin's Cultivator Co., Ltd.	With	6-0	18-0	445 max.
32	Melchor, Armstrong & Dessen (Lond.), Ltd.	With	6-88	12-0	900
34	Noyes, Stockwell & Co., Ltd.	Across	6-0	10-0	1,000 max.
36	Peter Brotherhood, Ltd.	With	5-5	12-0	900
37	Pick Motor Co.	With	7-0	14-0	800
41	Saunderson Tractor and Implement Co., Ltd.	With	7-0	12-0	750
45	Wallace Farm Implements, Ltd.	Across	5-0	9-0	1,150
46	W. Weeks & Son.	With	6-0	10-0	900
CLASS 3					
7	Fabrique d'Automobiles, Berna, S.A.	With	5-0	10-0	430
27	John Lauson Manufacturing Co.	With	6-0	18-0	475
CLASSES 1 and 2. Chain-tracks					
8	Blackstone & Co., Ltd.	With	7-0	18-0	500
10 & 11	H. G. Burford & Co., Ltd.	With	6-0	8-0	1,000
CLASS 4					
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	With	6	30	300
CLASS 6					
21	John Fowler & Co. (Leeds), Ltd.	With	9	43	300
CLASS 5					
20	John Fowler & Co. (Leeds), Ltd.	With	7	24	400
31	J. & H. McLaren, Ltd.	Across	6-6	10	1,000
CLASS 7					
15	Crawley Agrimotor Co., Ltd.	Across	6	14	500
22	John Fowler & Co. (Leeds), Ltd.	With	4-75	8	1,100
30	Martin's Cultivator Co., Ltd.	With	6	18	84
33	Motrac Engineering, Ltd.	With	6-6	9	1,100
38	Ransomes, Sims & Jefferies, Ltd.	Across	6	10-5	800
39	C. Sandler & Co., Ltd.				

Except where otherwise stated the data in this Table are

(continued on next page) TABLE II.

## TRACTORS.

acity of Tanks: British Galls.			Water Injection	Carburettor	Radiator	No.		
Paraffin	Lubricating Oil	Water Including Radiator						
20-0	3-0	5-0	Yes	Halliday	Honeycomb	3		
10-0	2-0	7-0	None	Zenith	Gilled tube	5		
9-0	4-0	9-0	None	Kingston	Tube and fin	12		
17-5	2-5	9-0	None	Holley	Tube and fin	19		
14-0	2-0	7-0	Yes	Cox atmos.	Tubular	23		
18-0	3-5	12-5	Yes	Kingston	Tubular	24		
8-0	2-0	15-0	None	Degory	Film	42		
18-0	1-5	7-0	Yes	Kingston	Honeycomb	1		
23-0	1-0	10-0	Yes, seldom	Schebler	Honeycomb	2		
20-0	3-0	6-0	Yes	Halliday	Honeycomb	4		
10-0	2-0	7-0	None	Zenith	Gilled tube	6		
18-0	5-0	11-0	None	Kingston	Tube and fin	13		
12-0	4-0	6-0	None	Kingston	Prefex	14		
19-2	3-0	8-0	None	Twin-City Holley	Tube and fin	16		
14-0	2-0	7-0	None	Fiat twin jet	Gilled tube	17		
15-0	3-0	9-0	None	Holley	Gilled tube	20		
16-0	3-0	7-0	Seldom	Stormberg	Honeycomb	32		
20-0	2-0	5-2	1 to 20	Kingston	Prefex	34		
18-0	—	8-5	None	Zenith modif.	Gilled tube	36		
8-0	—	5-0	—	—	—	37		
10-0	2-5	17-0	None	Saunderson	Film	41		
14-0	2-0	8-0	None	Zephyr	Gilled tube	45		
5-0	1-0	5-0	None	Zenith	Tubular	46		
—	2-0	10-0	None	Claudel-Berna	Honeycomb	7		
23-0	2-0	5-5	None	Kingston	Honeycomb	27		
10-0	2-0	6-0	None	Special	Tubular	8		
11-0	1-5	4-0	None	Kingston	Gilled tube	10&11		
city								
Hauling Gear Speeds.								
Tank	Drum dia.	Rope dia.	Revs. per min.	Revs. per min.	Revs. per min.	Ft. per min.	Ft. per min.	Ft. per min.
galls.	in.	in.						
200	14-5	0-5	29	46	66	149	235	337
Plough Speeds								
						ft. per min.	ft. per min.	m.p.h. in.p.h.
136	24-3	0-63	51	—	—	—	—	3-75
Tank Capacity, British Galls								
Paraffin	Lubricating Oil	Water including Radiator	Water Injection					
—	7-5	8-75	None		185	280	2-1	3-3
28	—	10-0	None		265	315	3-0	3-6
							Carburettor	
8	—	12	None		Degory No-jet		Gilled tube	
—	—	5-7	None		Zenith		Spiral tube	
7-7	3	9	None		Holley		Gilled tube	
12	2	4	None		Ensign-Paraffin		Modine-Spire	
10	2	10	None		Zenith		Gilled tube	
5	—	—	—		—		—	

The Entrants, checked and corrected where errors have been found.

TABLE II (continued from previous page).

## WHEELED AND C

No.	Name of Competitor	Differential		Ack. Ch.
		Gear	Lock	
CLASS 1				
3	Ancona Motor Co., Ltd.	Yes	Yes	
5	Austin Motor Co., Ltd.	Yes	No	
12	J. I. Case Threshing Machine Co.	Yes	—	
19	Henry Ford & Son, Ltd.	Yes	No	
23	Henry Garner, Ltd.	Yes	No	
24	General Motors, Ltd.	Yes	No	
42	Saunderson Tractor and Implement Co., Ltd.	Yes	—	
CLASS 2				
1	Agri-tractor Contract Co., Ltd.	Yes	No	
2	Agricultural Wholesale Society, Ltd.	Yes	—	
4	Ancona Motor Co., Ltd.	Yes	Yes	
6	Austin Motor Co., Ltd.	Yes	No	
13	J. I. Case Threshing Machine Co.	Yes	—	
14	Chase Tractors Corporation, Ltd.	No	No	
16	Fairbanks, Morse & Co., Ltd.	Yes	No	
17	Fiat Motors, Ltd.	Yes	No	
23	Martin's Cultivator Co., Ltd.	Yes	No	
32	Melchior, Armstrong & Deasau (Lond.), Ltd.	Yes	No	
34	Noyes, Stockwell & Co., Ltd.	Yes	—	
36	Peter Brotherhood, Ltd.	Yes	No	
37	Pick Motor Co.	—	—	
41	Saunderson Tractor and Implement Co., Ltd.	Yes	—	
45	Wallace Farm Implements, Ltd.	No	No	
46	W. Weeks & Son.	Yes	Yes	
CLASS 3				
7	Fabrique d'Automobiles, Berna, S.A.	Yes	No	
27	John Lauson Manufacturing Co.	Yes	Yes	
CLASSES 1 and 2. Chain-tracks				
8	Blackstone & Co., Ltd.	Yes	—	
10 & 11	H. G. Burford & Co., Ltd.	Yes	—	
CLASS 4				
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	Yes	Yes	
CLASS 6				
21	John Fowler & Co. (Leeds), Ltd.	Driving pins		
CLASS 5				
20	John Fowler & Co. (Leeds), Ltd.	Yes	Yes	
81	J. & H. McLaren, Ltd.	Yes	None	
CLASS 7				
15	Crawley Agrimotor Co., Ltd.	Clutch to each wheel		
22	John Fowler & Co. (Leeds), Ltd.	Yes	Yes	
30	Martin's Cultivator Co., Ltd.	No	No	
33	Motrac Engineering, Ltd.	Yes	Yes	
38	Ransomes, Sims & Jefferies, Ltd.	Yes	Yes	
39	C. Santler & Co., Ltd.	Yes	No	

Except where otherwise stated the data in this Table are \*

(continued on next page) TABLE II.

## TRACTORS.

Drawgear Details				Overall			Front Wheels			
eight ftin.	Lateral Adjust- ment	Distance behind Back Axle	Ground Clear- ance	Length	Width	Minimum Turning Circle Dia.	No.	Dia.	Width	No.
in.	in.	in.	in.	ft. in.	ft. in.	ft. in.		in.	in.	
13½	10½	22	13	11 0	5 1	26 0	2	30	8	3
9	30	34	12	9 2	5 1	25 4	2	30	6	5
13	—	—	13	8 6	4 8	24 10	2	30	6	12
12	9½	13-5	11	8 6	5 2	22 6	2	28	5-3	19
8	15	26	9½	10 6	5 6	24 8	2	30	4	23
11	15½	15	10	9 6	4 10	27 2	2	27	4-3	24
16½	15	30	16	10 1	4 2½	26 7	2	27	5	42
18	42	42	18	12 2	6 1	24 4	2	46	4	1
0	48	—	16½	11 9	6 4	23 4	2	28	4-3	2
13½	10½	22	13	11 0	5 1	25 6	2	30	8	4
9	30	34	12	9 2	5 1	22 9	2	30	6	6
14	42	—	14	10 7	6 0	31 8	2	32	6	13
15	30	30	15	11 8	6 0	16 6	1	36	8	14
16	12	16	11	11 2	5 3	25 6	2	34	6	16
15½	34	26	15	10 0	5 5	26 8	2	32	5	17
18	13	14	12½	11 9	5 11	30 6	2	33	6	20
12	15	—	12	11 1	4 7	28 0	2	36	6	32
18	30	24	18	10 0	5 1	22 7	2	31	5	34
10	12	24	12	11 0	5 0	37 0	2	36	6	36
10	—	—	—	—	—	—	2	35	5	37
16½	21	36	18	12 0	5 6	35 0	2	30	8	41
9	10	27	14	11 4	5 0	36 0	2	39	8	45
12	20	27	12	8 6	4 0	25 9	2	30	5	46
9	5	32	10	14 5	5 4	32 0	2	33	6	7
12	27	32	11½	11 4	6 2	—	2	36	6	27
18½	10	9½	7½	8 1	4 6	22 8	Chain-track			8
15	15	10	12	8 6	4 2	13 0	Chain-track			10& 11
19	30	30	9	13 5	5 10	24 0	2	35	8	28
33	—	—	13	20 2	6 8	39 0	2	48	9	21
35	—	—	15	19 4	7 2	—	2	42	9	30
—	—	—	9-5	16 4	8 6	42 0	2	33	9	31
Type of Plough										
artin or Ransomes				10-5	17 6	5 2	24 0	2	48	8 15
Fowler 2-furrow				8	17 2	4 4	—	2	64	8 22
3-furrow (chain tracks)				13	18 0	4 8	20 0	2	Track	8 30
Johns 3-furrow				29	5 6*	4 6	16* 0	2	52	8 33
Ransomes 3-furrow				13	16 0	5 6	24 0	2	52	9 38
furrow each way				—	—	—	1	24	6	38

\* Without plough.

† The Entrants, checked and corrected where errors have been found.



TABLE II (continued from previous page).

## WHEELED AND G

No.	Name of Competitor	Rear Wheels			Load on Ws		
		No.	Dia.	Width	Wheel Base	Front	Rear
CLASS 1							
3	Ancona Motor Co., Ltd.	2	48	12	84	1,288	2,264
5	Austin Motor Co., Ltd.	2	42	10	68	1,344	2,004
12	J. I. Case Threshing Machine Co.	2	42	9	65	1,468	2,304
19	Henry Ford & Son, Ltd.	2	42	12	63	1,072	1,588
23	Henry Garner, Ltd.	2	40	10	76	1,344	2,668
24	General Motors, Ltd.	2	45	12	66	1,340	2,008
42	Saunderson Tractor and Implement Co., Ltd.	2	42	10	78	—	—
CLASS 2							
1	Agri-tractor Contract Co., Ltd.	2	60	10	94	1,378	4,114
2	Agricultural Wholesale Society, Ltd.	2	52	10	89	1,404	4,074
4	Ancona Motor Co., Ltd.	2	48	12	84	1,248	2,044
6	Austin Motor Co., Ltd.	2	42	10	68	1,344	2,074
13	J. I. Case Threshing Machine Co.	2	52	12	76.5	1,922	3,204
14	Chase Tractors Corporation, Ltd.	2	48	12	102	2,050	3,584
16	Fairbanks, Morse & Co., Ltd.	2	50	12	84	1,704	3,144
17	Fiat Motors, Ltd.	2	52	12	69	2,324	4,064
29	Martin's Cultivator Co., Ltd.	2	51	10	83	2,240	3,544
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	2	54	12	87	1,496	3,424
34	Noyes, Stockwell & Co., Ltd.	2	46	10	86	1,500	2,164
36	Peter Brotherhood, Ltd.	2	54	10	87	1,920	3,774
37	Pick Motor Co.	2	43	12	—	1,004	2,574
41	Saunderson Tractor and Implement Co., Ltd.	2	48	10	90	1,848	4,312
45	Wallace Farm Implements, Ltd.	1	40	12	75	1,080	2,734
46	W. Weeks & Son	2	40	10	72	1,400	2,524
CLASS 3							
7	Fabrique d'Automobiles, Berna, S.A.	2	65	12	120	2,240	5,154
27	John Lauson Manufacturing Co.	2	54	12	86	2,230	4,654
CLASSES 1 and 2. Chain-tracks							
8	Blackstone & Co., Ltd.	2	52	7	59	—	5,044
10 & 11	H. G. Burford & Co., Ltd.	2	48	8	50	—	3,064
CLASS 4							
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	2	51	26	97	3,584	8,794
CLASS 6							
21	John Fowler & Co. (Leeds), Ltd.	2	72	16	147	7,700	19,154
CLASS 5							
20	John Fowler & Co. (Leeds), Ltd.	2	66	16	147	6,500	11,854
31	J. & H. McLaren, Ltd.	2	42	9	120	2,300	5,044
CLASS 7							
15	Crawley Agrimotor Co., Ltd.	—	—	—	—	About 4,900	—
22	John Fowler & Co. (Leeds), Ltd.	—	—	—	—	4,400	—
30	Martin's Cultivator Co., Ltd.	—	—	—	—	4,300	—
33	Motrac Engineering, Ltd.	2	26	5	—	3,200	1,284
38	Ransomes, Sims & Jefferies, Ltd.	—	—	—	—	4,600	—
39	C. Santler & Co., Ltd.	2	51	9	—	900	4,484
			50	12	—	—	—

Except where otherwise stated the data in this Table are

TABLE II (concluded from previous page).

## TRACTORS.

Inkage load : b. per q. in.†	Drakes		Rated h.p.			Cost of Tractor			No.
	No.	Acting on	Springing	Per Furrow†	Per Ton†	Total Sept. 27, 1920	Per Furrow†	Per h.p.†	
17-8	2	2 rear wheels & pulley	Sprung	11-8	12-8	£ 525	£ 202 10	£ 22 5	8
16-2	2	Each rear wheel	Front axle	11-0	14-3	380	180 0	16 9	5
20-3	1	Pulley	None	10-8	12-1	425	212 10	20 15	12
10-3	None		None	10-4	17-5	280	120 0	12 10	19
21-5	1	Two rear wheels	Front axle	11-6	12-9	465	232 10	20 1	23
12-9	1	Delt pulley	None	11-5	15-1	330	165 0	14 8	24
--	2	Both rear wheels	Front wheels	10-0	14-8	350	175 0	17 10	42
26-9	1	Spur gear	None	8-6	10-5	575	191 13	22 6	1
28-5	2	Differential and pulley	None	9-6	11-8	530	176 13	18 8	2
18-0	2	Rear wheels and pulley	Sprung	7-9	12-6	525	175 0	22 5	4
16-2	2	Each rear wheel	Front axle	9-1	17-9	360	120 0	13 3	6
23-0	1	Pulley	None	9-5	10-7	600	200 0	21 3	13
21-6	1	Pinion shaft	Front wheel	8-2	9-8	500	166 13	20 8	14
18-7	1	Intermediate gear	Front wheels	9-4	13-0	525	175 0	18 14	16
23-9	1	Pulley	Front axle	9-4	9-9	595	198 7	21 0	17
25-3	2	Pulley and gear ring	Both axles	7-7	8-9	510	170 0	22 0	29
19-6	1	Final drive	None	8-8	12-0	495	165 0	18 15	32
22-0	2	Each rear wheel	Sprung	9-6	14-5	450	150 0	15 11	34
21-4	1	2nd motion shaft	None	9-7	11-5	575	191 13	19 17	36
15-7	2		None	7-0	10-5	—	—	—	37
31-4	2	Gear shaft and diff.	Front wheels	7-9	8-6	510	170 0	21 12	41
36-8	1	Side shaft	None	8-9	13-6	550	183 7	20 12	45
19-9	1	Cardan shaft	Front axle	8-1	13-9	485	161 13	19 19	46
26-8	2	Both countershafts	Front axle	8-4	10-2	1,100	275 0	32 17	7
26-7	2	Shaft and pulley	None	8-4	10-8	700	175 0	20 19	27
5-4	1	2nd motion shaft	None	7-9	10-6	575	191 13	24 3	8
4-6	1	Differential	Sprung	8-0	14-7	475	158 7	19 16	10 11
30-9	1	Back axle	Sprung	6-25	4-6	1,000	250 0	40 0	28
70-9	1	Steam reverse	—	—	—	Total per pair 4,330	Per furrow per pair 806 0	—	21
46-0	1	Cardan Shaft	—	9-2	5-6	4,000	800 0	87 0	20
52-1	1	Epiclyclo gear	—	8-0	8-6	2,250	562 10	70 6	31
52-1	1	Worm spindle	—	8-0	8-6	2,250	562 10	70 6	31
52-1	1	Winding drum	—	8-0	8-6	2,250	562 10	70 6	31
45-01	1	Propeller shaft	None	8-1	10-5	545	181 13	22 8	15
37-62	1	Each wheel	None	10-55	10-3	400	200 0	19 10	22
67-1	1	Each track	None	7-7	11-6	400	133 7	17 5	30
28-11	2	Diff. shaft (hand)	None	6-9	10-5	585	188 7	27 6	38
35-71	1	Each wheel	None	6-7	7-7	500	166 13	25 0	88
36-34	1	—	Front	7-8	8-5	—	—	—	39

\* On back wheels.

† Calculated from the data in the table.

‡ On front wheels.

v The Entrants, checked and corrected where errors have been found.

Class	Land	No. of furrows	No. of Attendants	Time in hours per acre			Fuel in gallons per acre			Wages in pence per acre			Fuel cost in pence per acre			Total cost labour and fuel per acre
				Average lowest	Min-imum	Max-imum	Average lowest	Min-imum	Max-imum	Average lowest	Min-imum	Max-imum	Average lowest	Min-imum	Max-imum	
1	Light	2	1	1-58	1-02	2-33	2-63 (2-83) <sup>+</sup>	2-00 (2-34) <sup>+</sup>	5-41 (5-51) <sup>+</sup>	28-5	34-5	60-5 (60-7)	66-7 (68-4)	7-4 (7-5)	8-5	124-4
1	Heavy	2	1	1-75	1-56	2-61	2-55 (2-87) <sup>+</sup>	2-55 (2-87) <sup>+</sup>	3-43 (3-53) <sup>+</sup>	31-5	35-3	53-35 (53-7)	58-4 (58-7)	9-2	10-11	156-7
2	Light	3	1	1-08	1-21	1-99	2-08 (2-06)	2-06 (2-06)	4-12 (4-12)	19-0	21-8	47-4 (48-1)	69-0 (69-3)	5-7	8-4	94-8
2	Heavy	3	1	1-80	1-52	4-00	3-63 (3-78) <sup>+</sup>	3-63 (3-78) <sup>+</sup>	5-34 (5-54) <sup>+</sup>	23-4	27-4	68-1 (68-1)	83-5 (83-5)	7-71	11-8	149-7 (152-3)
3	Light	4	1	1-21	—	1-00	2-62 (2-62)	—	3-06 (3-06)	21-8	—	60-2 (60-2)	125-4 (125-4)	8-10	9-0	16-8
3	Heavy	4	1	2-01	—	—	7-12 (7-12)	—	3-62 (3-62)	36-2	—	168-8 (168-8)	—	16-8	16-8	—
4	Light	4†	2	1-02	—	—	147 lb. (147 lb.)	—	—	36-0	—	35-0 (35-0)	6-0 (6-0)	6-0	6-0	12-1
4	Heavy	4†	2	1-83	—	—	330 lb. (330 lb.)	—	—	66-0	—	78-7 (78-7)	—	12-1	12-1	—
5	Light	4 or 6†	3	0-55	—	0-70	1-92 (1-92)	—	2-03†† (2-03††)	29-7	—	37-8 (37-8)	44-2 (44-2)	6-2	9-3	107-81†
5	Heavy	4 or 6†	3	1-03	—	1-40	4-03†† (4-03††)	—	4-34 (4-34)	55-4	—	80-3 (80-3)	100-0 (100-0)	13-0	15-10	168-3††
6	Light	5††	4	0-62	—	—	97 lb. (97 lb.)	—	—	43-5	—	23-1 (23-1)	—	5-71	8-71	57-1
6	Heavy	5††	4	0-77	—	—	177 lb. (177 lb.)	—	—	55-4	—	42-2 (42-2)	—	8-11	8-11	—
7	Light	3**	1	1-46	1-89	2-42	2-21 (2-21)	2-84 (2-84)	4-48 (4-48)	28-38†	38-9	50-8 (50-8)	65-8 (65-8)	6-5	9-3	108-0
7	Heavy	3**	1	1-30	2-08	3-22	2-27 (2-27)	3-78 (3-78)	6-21 (6-21)	25-4††	57-4	52-2 (52-2)	142-8 (142-8)	6-38	13-2	193-8

**NOTE.**—The figures for minimum time and minimum fuel consumption per acre do not necessarily apply to the sown tractor. The same is the case for the maximum fuel rate, though not necessarily actually obtained. The figures for minimum cost of fuel per acre, however, are based on the figures for minimum fuel consumption per acre. The figures in italics are per equivalent acre; the figures above the roman type are per actual acre.

§ These figures for cost per equivalent acre represent the cost of fuel that would have been obtained on light land of standard resistance to the plough.

†† Coal only used as fuel.  
‡‡ Petrol only used as fuel.

<sup>54</sup> Our competitor was frequently slowed down by water in the junction.

## APPENDIX I.

### DESCRIPTIONS OF THE PLOUGHS USED IN THE TRIALS.

#### 1. THE RUSTON AND HORNSBY DOUBLE-FURROW PLOUGH.

The double-furrow Ruston and Hornsby plough is a one-man outfit, operated from the tractor driver's seat by means of a cord. It can easily be converted into a three-furrow plough, and by a change of bodies and breasts can be made to do either ordinary or digging work.

The malleable bodies are adjustable as to width, and the depth can also be regulated. Ample clearance has been allowed for rough and weedy land.

The plough is exceptionally strong--the steel beams being designed for the heaviest work; the brackets are malleable, and give perfect rigidity. Dustproof caps are fitted to the land and furrow wheels. A carrying swivel wheel is fitted, and works in conjunction with the lifting arrangement.

Swivel disc coulters are supplied for general purpose work; skims for digging.

#### 2. THE RANSOMES RSLM-YL THREE-FURROW PLOUGH.

This is a one-man self-lift cord-operated plough.

The frames are constructed of plain steel beams of adequate strength, connected together by strong screwed stays.

Forged steel heads of ample dimensions are bolted to the beams to which the hake is attached, and sufficient range is provided to cover the correct positions of draught for practically all types of tractors.

The skifes are malleable, of ample proportions, and fitted with adjustments for "pitch."

The breasts and shares for general purpose or lea work are of the well-known "YL" pattern.

The wheels are of wrought steel, having rounding tyres, and are fitted with renewable dustproof and oil retaining bushes, which ensure perfect lubrication.

The depth regulating lever is arranged so that it can be conveniently used as a hand-power lever for raising the plough out of work.

An efficient screw adjustment is provided for the depth regulation of the furrow wheel.

The furrow wheel can be set to "bed" close up to the land side.

Adjustments are provided for varying widths as well as depths. A maximum depth of 8 in. to 9 in. can be obtained, while the range of adjustment for the width of furrow is from 8 in. to 10 in. for general purpose work.

The self-lift arrangement is operated from the land wheel and is positive in action, simple and effective. It consists of a toothed rack, which engages with a pinion fixed to the nave of the

land wheel. When operated (by means of the cord release provided, which is controlled by the driver of the tractor), the forward motion causes the plough to climb gradually out of work, and it is securely held in its raised position until released.

A lifting arrangement is fitted to the trailing wheel to facilitate the turning of the plough at the headlands.

Swivel disc coulters are the standard fitting for general purpose work, but skim coulters can be fitted to the discs if required at an extra charge.

## APPENDIX II.

### NATIONAL PHYSICAL LABORATORY TRACTION DYNAMOMETER FOR AGRICULTURAL TRACTORS.

By J. H. HYDE, A.M.Inst.C.E., M.I.A.E., A.M.I.M.E.

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In the summer of 1919 the Laboratory was approached by the Society of Motor Manufacturers and Traders with a request for assistance in the recording of draw-bar pulls of agricultural tractors at Lincoln in September of that year, on the grounds that no suitable British-made draw-bar provided with recording apparatus was available for the purpose. It was required that the draw-bar in these trials should be attached to the forward turntable of an ordinary road trailer which would be loaded and braked on the rear wheels in order to provide sufficient road resistance to enable the maximum draw-bar effect of the tractors to be determined. In the arrangement adopted the pull of the tractor was transmitted through a bell-crank lever to a leather diaphragm fitted to a box containing water. The diaphragm box was connected by a flexible pipe to a recording pressure gauge actuating a pen. The motion of the recorder paper was produced by means of gearing from the front wheels of the tractor.

In the present year the Laboratory received a similar request from the Royal Agricultural Society of England in conjunction with the Society of Motor Manufacturers and Traders in connection with the measurement of draw-bar pulls and speeds of tractors under ploughing conditions at the trials to be held at Lincoln in September-October, 1920. The Executive Committee of the Laboratory agreed that all possible help for the successful carrying out of the trials should be given by the engineering department, and a special dynamometer was designed and made at the Laboratory for the purpose.

The design of the instrument was influenced by the necessity of producing a dynamometer which would be capable of measuring and recording the draw-bar pull and speed of a tractor engaged in ploughing, special consideration being at the same time given to the fact that it was undesirable to separate the tractor and plough by apparatus which would in any way interfere with the proper working of the plough or with its control by the tractor driver.

For the purpose of competitive tractor trials, the dynamometer

would be required for use with many different makes of tractors and ploughs, and it could not be guaranteed that a suitable position for apparatus could be provided on either; further, it was desirable that the dynamometer should be capable of being quickly attached to or detached from one tractor and transferred to another. In consideration of these requirements it was decided to separate the dynamometer proper from the recording instrument and to place the latter on a light-wheeled carriage which could be either wheeled or towed alongside the tractor under test.

*The Dynamometer.*—The coupling between the tractor and plough consists of a cylinder and plunger, the former being attached to the draw-bar of the tractor and the latter, through links, to the plough. The pull on the coupling sets up a pressure in the oil confined in the cylinder, and this pressure is transmitted to a recording pressure gauge by a flexible hydraulic tube. The best flexible tube which could be obtained would safely withstand an internal pressure of 1 ton per square inch without reduction of flexibility, and as the dynamometer was required for pulls up to 3 tons, a diameter of plunger of approximately 2 in. was therefore necessary.

The cylinder was made of steel and the plunger of bronze, the clearance between the two was made 0.001 in., and the plunger was provided with a very thin packing ring of oiled leather. In order to avoid a gland the draw-bar pull was converted to a thrust on the plunger by means of the links L, L, and the pins  $P_1$ ,  $P_2$ . The thrust on the plunger is transmitted through the second plunger E, which is suitably guided in a continuation of the cylinder, and the connection between the two plungers is a loose one in order to allow the larger plunger to float freely in its cylinder. The pin  $P_1$  passes through the slots in the guide-piece.

The connection to the tractor draw-bar was made in such a manner that the cylinder could not rotate, but the opposite end of the dynamometer was provided with a swivel attachment for the plough. A rubber cover over the front portion served to exclude dust and grit from the interior of the cylinder.

*The Recording Instrument.*—The recording instrument was mounted on a two-wheeled carriage which was towed by the tractor, a suitable hitch being made to prevent damage to the connecting hydraulic tube. The recorder consists of a standard Schaffer and Budenberg pressure recorder considerably modified for the present purpose by the addition of a second Bourdon tube, a clock, and paper-driving device. The recording paper is driven through gearing and a chain drive from one of the carriage wheels, and three speeds of the paper are provided for, namely, 1 in. of travel to 100 ft., 50 ft., or 10 ft. motion of the carriage over the ground. The speed-change can be made while running if desired. As the recorder proper rests on thick felt pads, the final drive is made by means of a leather vee belt adjustment of the tension of which is provided for. The hydraulic tube from the dynamometer is connected to a small valve-box by which the pressure can be diverted to either of two Bourdon tubes.

The motion of the end of each Bourdon tube is magnified by a pen mechanism which is such that the travel of the pen is

4 in. for a maximum draw-bar pull of 4,000 lb. using tube No. 1, and 3½ in. for a maximum pull of 7,000 lb., using tube No. 2. The pen mechanism can be transferred to either tube by transferring a screw which forms the link pivot; the change can be effected during a test if required.

A clock is provided inside the recorder for indicating time on the record paper. An electrical contact is made at equal pre-determined intervals of time which can be varied from 2 seconds to 6 seconds, and the pen, which normally draws a straight line, is momentarily moved to one side when the contact takes place. A robust escapement for the clock is provided, and was found in practice to work extremely well, there being no apparent variation in the time intervals recorded, or in the total time even when the carriage was travelling over very rough ground and subject to much shock. In order that the number of time intervals indicated may be readily counted, every fourth contact is missed. A second pen is provided for recording revolutions of the tractor engine, or of the tractor driving wheels, and is identical with the time-recording pen.

An oil pump, taking oil from a small reservoir placed under the carriage, serves to prime the dynamometer and recorder. This pump is shut off when the apparatus is working. It will be observed that the measured distances on the chart between indications of equal time intervals are directly proportional to the speed because the travel of the paper is proportional to the distance travelled. The average speed for any interval of 5 seconds can, therefore, be readily obtained, and the curve of speed plotted on the chart. When the speed is low, and variable, this method for recording is preferable to using a centrifugal instrument.

*Calibration.*—The apparatus was calibrated by direct loading. The dynamometer coupling was hung from a crane hook and supported a cradle carrying a dead load which was increased by 500 lb. at a time. The indications of both pens were taken in turn and were found to agree precisely with those obtained by calculation from the oil pressure and the sectional area of the cylinder. When the load was 2,000 lb. a shift of the pen point of 0.01 in. could be clearly seen due to a gently added load of 10 lb. It was necessary to provide a small tapping device, consisting of the essential parts of an ordinary electric bell, to free the pen mechanism in order to enable it to record so small a load, but it was not necessary to use this during a test because the motion of the recorder carriage itself provided sufficient vibration for the purpose. The calibration left no room for doubt that the friction of the packing leather of the plunger in the dynamometer cylinder was small enough to be neglected. The sensitivity did not appear to be materially affected by the use of thick oil in the cylinder, and consequently for ploughing tests on stony ground or stiff land where the pull is very variable, it is advisable to use thick oil in order to damp the vibrations of the recording pen.

## APPENDIX III.

The Judges have obtained two estimates of the cost of ploughing. The one from Mr. John Evens, who farms in the district of the trials, is as follows:—

"At the Lincoln trials there were, broadly speaking, three classes of land:—

- "1. Light land on the cliff.
- "2. The lighter portion of the low land, field 'F.'
- "3. The heaviest low land fields 'G' and 'I.'

"The average cost of ploughing this land 6 in. deep with horses in 1920 was estimated at:—

- "1. Cliff land, 22s 6d. per acre.
- "2. Medium heavy land, 30s. to 35s. per acre.
- "3. Very strong, 40s. to 45s. per acre.

"The prices being based on the 1920 season's costs of labour and horse-keep.

"The relative value of tractors and horses may be expressed thus:—

"In the English climate, and for English conditions of soil, it must not be expected that the tractor will *displace* horses. Tractors are becoming increasingly useful to help out the horse work, because under the present conditions and hours of work the horses do not, and cannot, get the work done.

"The chief advantage of the tractor is its ability to work for long hours and make a push when the land is dry and when cultivation does most good.

"The most desirable features in a tractor are that it shall be as simple, as strong, and as reliable as possible, and these qualities are of more importance than the mere question of price."

The other estimate, from Mr. B. Howkins, of Bedford, gives comparative figures based on his own practical experience, and is as follows:—

Tractor Ploughing per Acre.			Horse Ploughing per Day.		
	£	s. d.		£	s. d.
Wear and tear of tractor	0	10 0	Three horses at 8s. per day	1	4 0
Paraffin oil, 4 gal. at			One man and one boy, per		
1s. 11d. . . . .	0	7 8	day . . . . .	0	15 0
Lubricating oil . . . .	0	1 6	Plough, shares, etc., per day	0	2 0
Labour.—One man at			Estimated daily work,		
£3 10s. per week. Weekly			1/2th of an acre.		
average, 15 acres. Cost					
per acre. . . . .	0	4 8			
Plough, shares, etc. . .	0	2 6			
<hr/>			<hr/>		
Cost per acre . . . . .	£1	6 4	Cost per acre. . . . .	£2	9 4

This is the estimated cost of ploughing medium strong land.

(The prices quoted in this comparison refer to Michaelmas, 1920, and to the usual working hours.)



Both costs would vary according to the class of land ploughed. The tractor can be of very great assistance to the farmer, especially in the early autumn; it can enable him to get his land up early, which is nearly as good as a dressing of manure; but the farmer must not rely upon tractors entirely.

The officials cannot speak too highly of the way in which the promoters of the trials were met by all concerned. Every facility was given, not only by the farmers on whose land the trials were held, but by everybody in the locality, and by engineering works and tradesmen in Lincoln.

Most cordial thanks should be given to the farmers who lent their land, *viz.*:—Messrs. Ward, Sargeant, Parkin, Sutton, Shelton and Brown.

The Society is greatly indebted to:—

The Chief Constable for the efficiency of the police.

Messrs. Letheby and Christopher, Ltd., for their catering.

Messrs. John Gilbert & Sons, Ltd., for garage arrangements, and for their readiness to assist in all matters.

The Anglo-American Oil Co., Ltd., for so satisfactorily carrying out arrangements for the supply of fuel oil.

Messrs. Ruston & Hornsby, Ltd., Messrs. Ransomes, Sims & Jefferies, Ltd., and Messrs. Martin's Cultivator Co., Ltd., for the use of their ploughs and implements, and for providing expert ploughmen. The above firms were successful in the ballot for supplying the ploughs, but the thanks of the Society are also due for the generosity of the several other firms who offered to place their ploughs and implements at the service of the Society.

To Mr. J. R. Jackson, the Trial Superintendent, we are deeply indebted for the setting out of the ground and for providing everything required. He was quite indefatigable, and we were much impressed with his ability and courtesy throughout.

Mr. John Evens, a member of the Trials Sub-Committee, needs a special word of thanks for the very great assistance he has given throughout. We regret that owing to illness Mr. C. W. Tindall was unable to take any active part. Mr. Deck of Messrs. Ransomes, Sims & Jefferies, was also most energetic and helpful.

JOHN E. CROSS,

U. ROLAND BURKE.

*Stewards, R.A.S.E.*

THOS. McROW,  
*Secretary.*

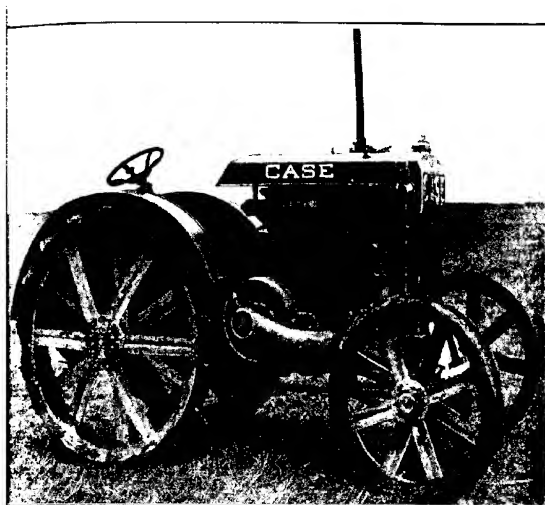


FIG. 1.—CLASS 1, 1ST PRIZE: CASE 10-18 TRACTOR (*p.* 9).

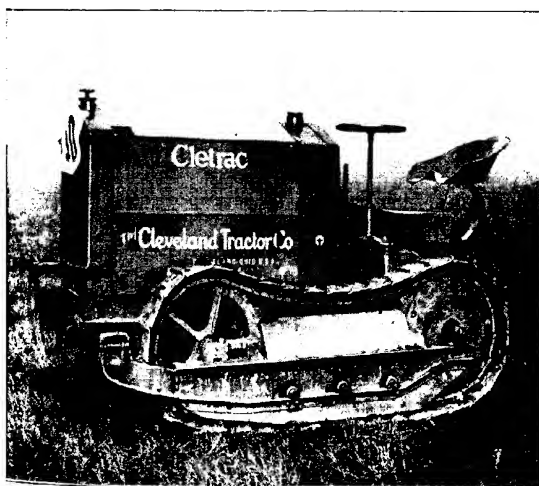
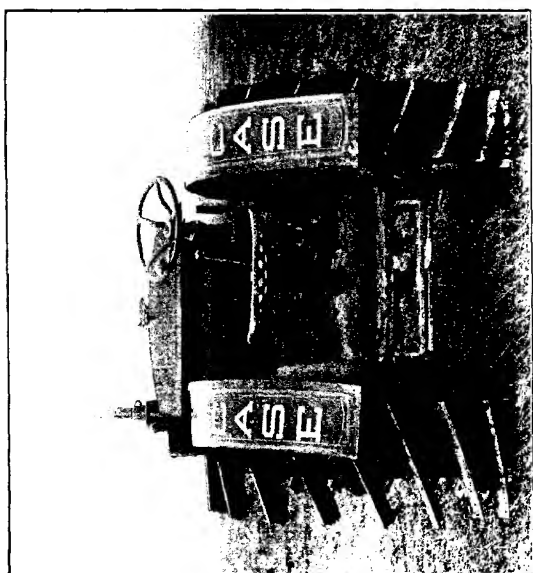
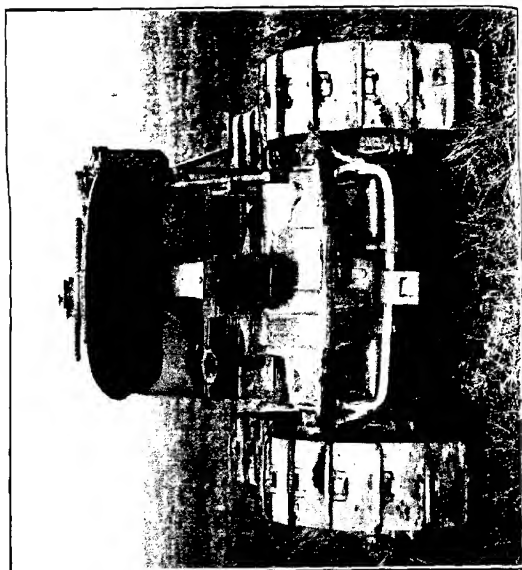


FIG. 2.—CLASS 1, 2ND PRIZE: CLETRAC TRACTOR (*pp.* 9 and 17).



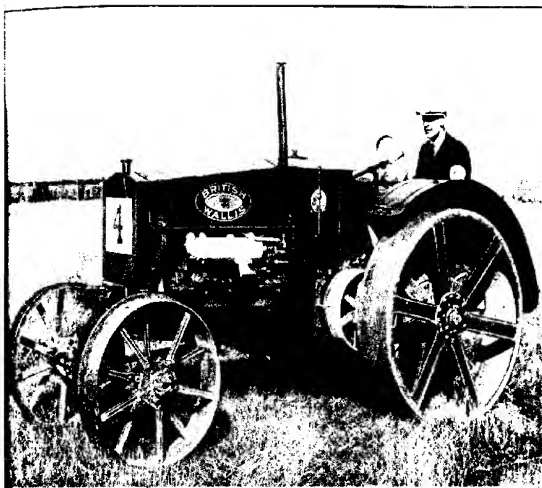


FIG. 5.—CLASS II., 1ST PRIZE: BRITISH WALLIS TRACTOR (pp. 7 and 16).

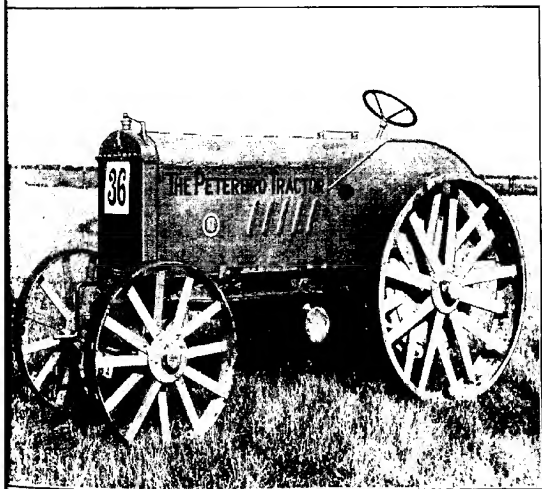
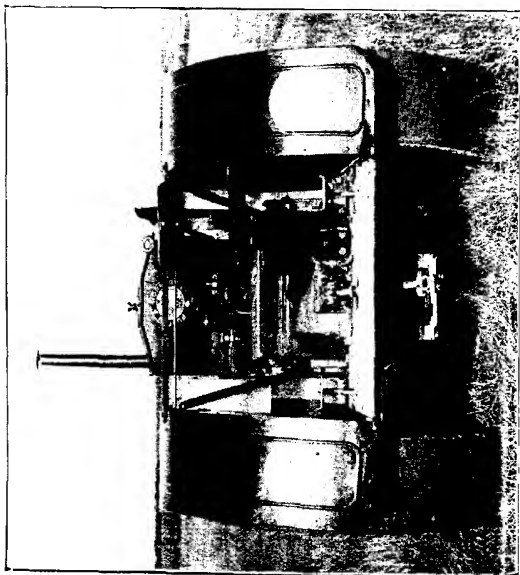
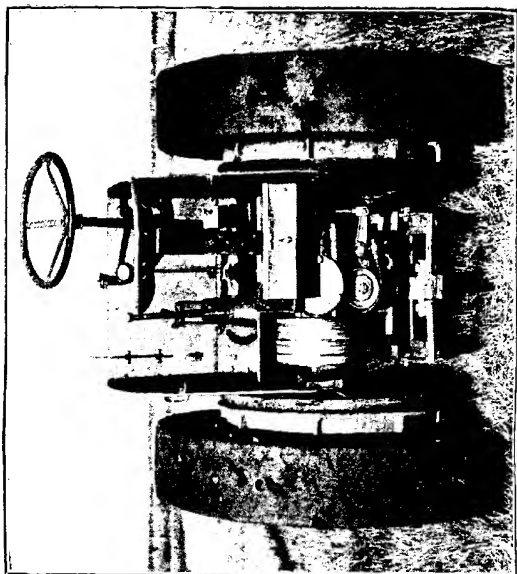


FIG. 6.—CLASS II., 2ND PRIZE: PETERBRO' TRACTOR (p. 23).



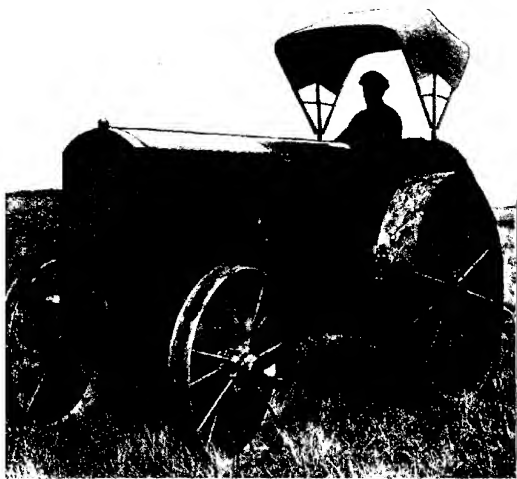


FIG. 9.—CLASS III., 1ST PRIZE: JAUSON 15-30 TRACTOR (*p.* 28).



FIG. 10.—CLASS IV., 1ST PRIZE: MANN STEAM TRACTOR (*p.* 29).

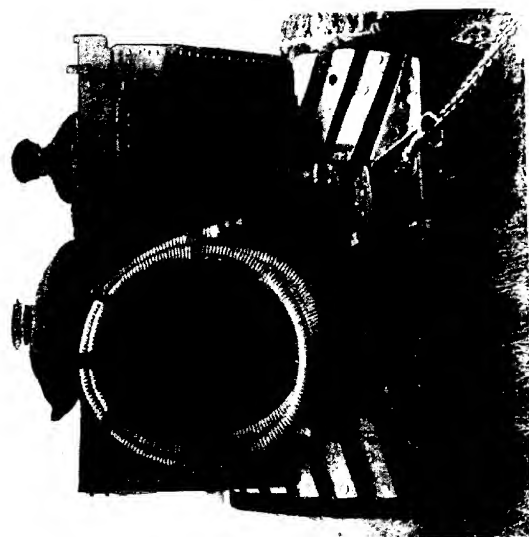


FIG. 10. — Camera 1A. — 1897. Patent 1,100,000.

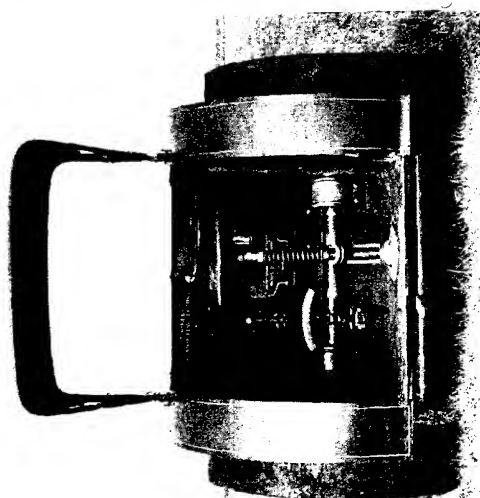


FIG. 11. — Camera 1B. — 1897. Patent 1,100,000.

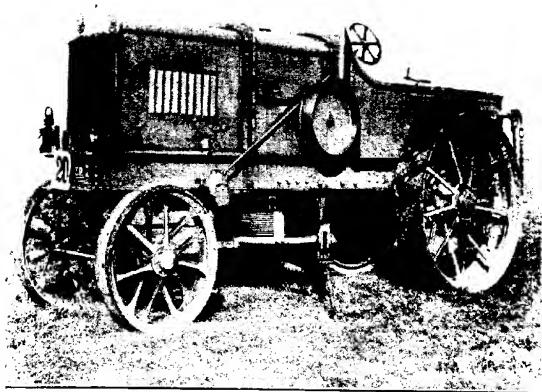


FIG. 13.—CLASS V., 1ST PRIZE: FOWLER MOTOR CABLE PLOWCH (p. 50).

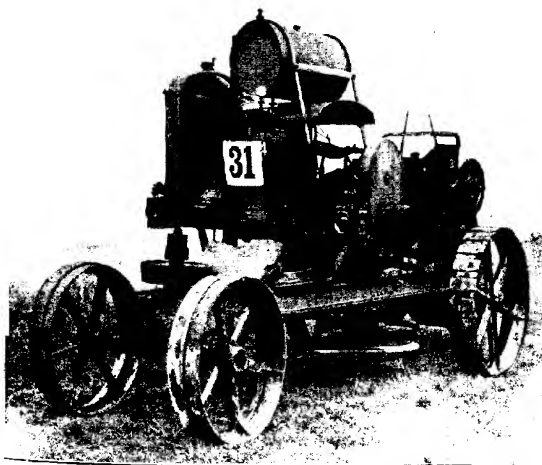


FIG. 14.—CLASS V., 2ND PRIZE: MCLAREN'S PATENT MOTOR WINDLASS (p. 50).





FIG. 15.—CLASS V., 1ST PRIZE: FOWLER MOTOR CABLE PLOUGH (p. 30).



FIG. 16.—CLASS V., 2ND PRIZE: MCLAREN'S PATENT MOTOR WINDLASS (p. 30).

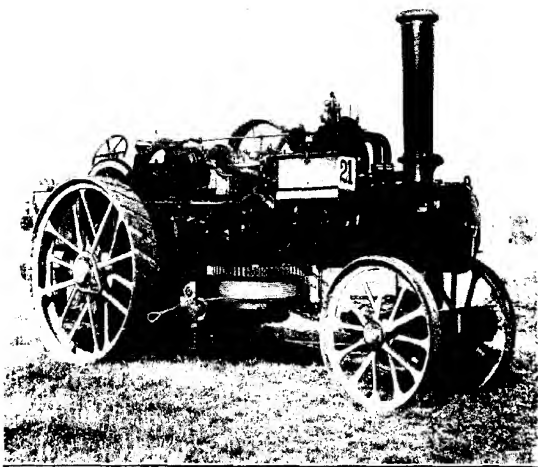


FIG. 17.—CLASS VI, 1ST PRIZE: FOWLER CLASS "DD" STEAM CABLE PLOUGH (p. 34).

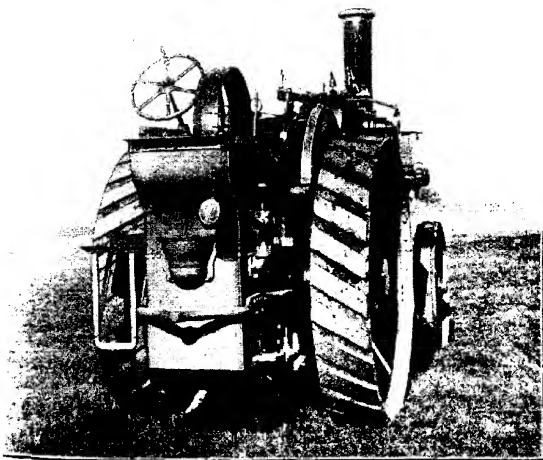


FIG. 18.—CLASS VI, 1ST PRIZE: FOWLER CLASS "DD" STEAM CABLE PLOUGH (p. 31).

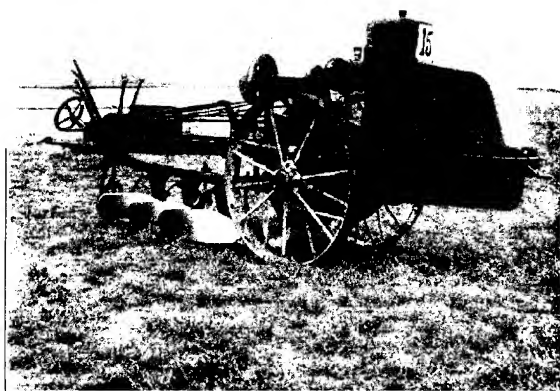


FIG. 19.—CLASS VII, 1ST PRIZE: CRAWLEY MOTOR PLOUGH (p. 32).

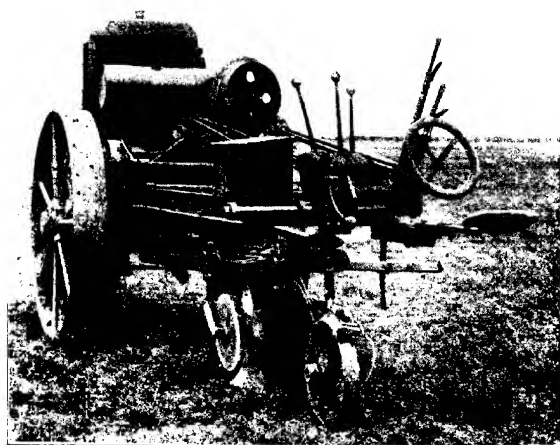


FIG. 20.—CLASS VII, 1ST PRIZE: CRAWLEY MOTOR PLOUGH (p. 32).

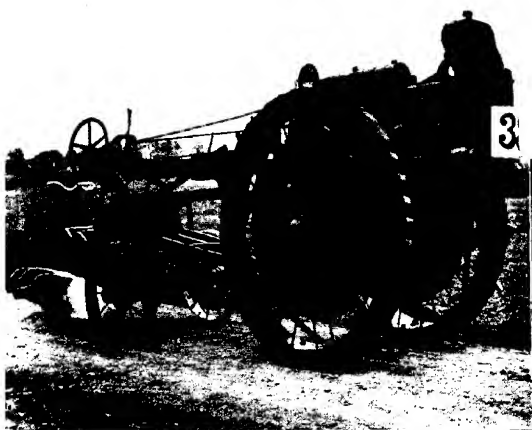


FIG. 21.—CLASS VII., 2ND PRIZE: MOLINE MOTOR PLOUGH (p. 35).

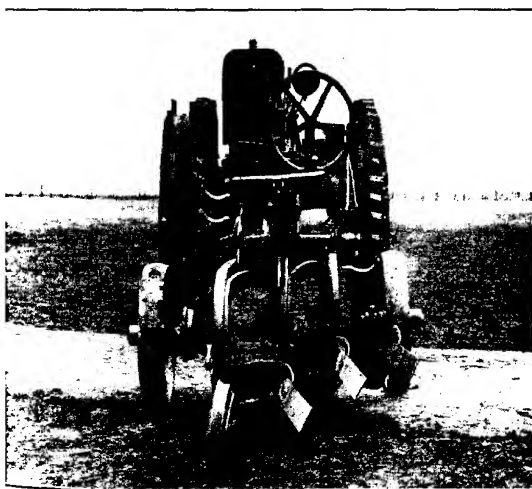


FIG. 22.—CLASS VII., 2ND PRIZE: MOLINE MOTOR PLOUGH (p. 35).



## AGRICULTURAL EDUCATION IN DENMARK.

The writer was fortunate in being a member of the agricultural expedition that, under the auspices of the English Ministry of Agriculture, spent a month in Denmark, from June 25 to July 25, 1920. This article is compiled from first-hand information obtained during that tour.

In area Denmark is a little less than one-third of the size of England and Wales and less than one-half the size of Scotland. As compared with England it is a country of small farmers. A sixth of the whole of the land is in holdings of less than 35 acres, and two-thirds is in holdings of less than 150 acres. Since the beginning of the twentieth century the State has encouraged the establishment of these small farms by issuing cheap loans to the owners of newly-established small farming properties, and since 1900 more than £3,000,000 have been granted as direct loans for this purpose, practically all the farms now being freehold. They are worked in many cases solely by the farmer and his family. Although nearly 90 per cent. of the land of Denmark is under arable cultivation, the agriculture of the country is founded on cows. There are 46 cows for every 100 head of population, as compared with 10 cows per 100 head of population in England and Wales. The milk is sent to local creameries to be made into butter, or cheese, for export, so that the work of the creameries is of great importance. Bacon and eggs are also very important agricultural products.

The above considerations must be borne in mind in connection with the scheme of agricultural education for the country, and in tracing out this scheme it seems desirable to start with the boy at the Elementary School and gradually trace his career through various schools to the highly technical Royal Agricultural College at Copenhagen, finishing up with his work as a fully-qualified expert.

### THE ELEMENTARY SCHOOLS.

Denmark is essentially an agricultural country and the writer expected to find a strong agricultural bias in the teaching in the Elementary Schools. In this, however, he was disappointed. Education is compulsory, as in England, up to the age of 14, but there is very little Nature Study included in the curriculum and it is exceptional to find School Gardens attached to the schools. Some of the schools in the towns are provided with School Gardens for children who have no opportunity of learning gardening at home, but in the country the

authorities argue that School Gardens are unnecessary. They do not seem to have realised the great value of School Gardens for educational purposes.

In the villages the schools are mixed, both girls and boys being taught in the same classes by the same teachers, and in most of the schools there are four classes, taught by two teachers, each having two classes. Class 1 will include children from 6 to 8 years of age; Class 2, children of 8 to 10; Class 3, children from 10 to 12; and Class 4, children of 12 to 14. There is a regulation that no class shall consist of more than 37 pupils. The school opens at 8 a.m. in the summer time, or at 9 a.m. in the winter time, and closes at 3 p.m. or 4 p.m. A full school day varies from 6 working hours for older children down to 4 hours a day for the youngest children. The children do not as a rule attend school every day of the week, though there is no fixed rule about this. In "the Islands" it is usual for each class to attend school every other day, *i.e.*, either on Mondays, Wednesdays and Fridays, or on Tuesdays, Thursdays and Saturdays, but in Jutland the elder children attend school on more days in the winter than in the summer, younger children attending on more days in the summer than in the winter. In this way the elder children are more free for working on the farms in the busy summer season. The arrangements vary according to local circumstances, but every class must receive instruction for 41 school weeks, averaging at least 18 hours per week, exclusive of time occupied in gymnastics, needlework and voluntary subjects. There are holidays at Christmas, Easter, Whitsun, and in the summer.

The number of pupils attending a country school is usually under 100 but in the towns it reaches 1,000, and in Copenhagen over 1,500, so that the number of classes is increased proportionately and the boys and girls are kept separate. In the towns the children attend school either in the morning or in the afternoon of every week-day, the attendance averaging 24 to 36 hours a week, and it is required that at least 21 hours' instruction per week be given, exclusive of extra subjects, drawing and cookery.

Compulsory subjects of instruction are reading, grammar, religion, writing, arithmetic, history, geography, singing, and for the boys gymnastics. In the country schools employing a lady teacher needlework for girls is also compulsory. In the towns drawing and, for the girls, gymnastics and needlework are compulsory subjects. Gymnastics, which take the form principally of Swedish exercises, are a prominent feature in all types of school in Denmark. Optional subjects are natural history, gymnastics (for girls), housewifery, mathematics and a foreign language (English or German).

There is no technical teaching nor any agricultural bias in the instruction given in the village schools ; in fact the instruction is on the same lines as in the town schools, though the Head Teacher is usually given a good deal of liberty of action so that the details of the instruction vary a good deal in different schools. The Head Teacher lays his programme of instruction for the year before the local School Board, who approve, or otherwise, his proposals.

Denmark is divided for administrative purposes into a number of counties, and each county is divided into a number of communities. A community may consist of one, two or more villages (usually one village only) and is under the jurisdiction of a local Council with a local School Board consisting, in the country districts, of the minister of the parish as chairman, *ex-officio*, and about four members appointed by or from the members of the local Council. In the towns the chairman of the local School Board is appointed by the Board from its own members. The school belongs to the community and the expense of building and keeping the school in repair is borne by the rates levied by the local Council. The control of the work of the schools is in the hands of the local School Board, which is a sub-committee of the local Council, and the local Council appoints its own teachers, the appointments being subject to the approval of the Education Committee of the County Council. The salaries of the teachers are paid partly by the local Council, partly by the County and partly by the State.

#### CONTINUATION CLASSES.

At present there is no compulsory education after the age of 14, and the Education Authorities of Denmark are watching the effect of the new Education Act in England before raising the age to 16, or even higher.

The elementary school buildings are, however, used for voluntary Afternoon and Evening Schools. The teachers are the same as those employed in the Elementary School, and if the teacher is popular his classes are well attended. The writer was told, for example, of a small village of 300 inhabitants where 30 to 40 pupils regularly attend the Evening School. The local School Boards decide whether Continuation Classes shall be held in their schools, the subjects to be taught, and the number of evenings per week on which classes shall be held. The evening classes are usually held in the winter and extend over two hours, closing not later than 8 p.m. The instruction is free, and the subjects taught include history, geography, reading, writing, the Danish language, book-keeping, surveying, drawing, gymnastics, &c. The Continuation Classes for the boys and girls are usually held on different days of the week, and the subjects



of instruction vary according to the district and whether the school is in the town or in the country. Pupils attend these classes up to the age of 18.

Difficulty has been experienced in the past in getting farmers to free their boys so that they can attend the Evening Classes, and a Bill will come before the Danish Parliament in the autumn (1920) by which, if passed, it will be illegal for any employer to hold back a boy or girl between the ages of 15 and 17 who desires to attend any of these classes. A stimulus will also be given to the classes by giving the local Councils money grants from the State covering 75 per cent. of the expenses, by supplementing the Elementary School teachers by the appointment of special teachers for special subjects, and by holding classes in the rural districts in the afternoons as well as in the evenings.

#### SECONDARY EDUCATION.

Children who wish to continue their whole-time education, after the age of 14, can enter one of the "Realskoler," which exist in all small towns, or a Higher School at the age of 10 or 12. The "Realskoler" are a type of school supplying children with instruction in geography, history, natural science, modern languages and elementary mathematics, up to the age of 16, and are intended for boys who intend to be bank clerks, &c., and wish to complete their education at that age. The Higher Schools educate children up to their eighteenth year and the pupils can choose between studying classics, mathematics or modern languages. Scholars who pass the final examination from one of these schools are qualified to enter the University at Copenhagen.

#### FOLKS' HIGH SCHOOLS.

A characteristic feature of the educational system of Denmark is the part played by the Folks' High Schools. There are about 100 of these schools, each taking from 30 to 300 pupils at each course, and they are all privately-owned schools supplying residential short courses of general instruction for men and women over the age of 18. In the year 1915, 2,411 male students and 2,695 women students attended these courses. No technical instruction is given except, in a few cases, in surveying and drawing. Their professed aims are solely moral, to give individual training on national and religious lines, to teach the pupils to love their country and to become better citizens than they were before and to prepare young men and women for the battle of life. At most of the Folks' High Schools there are two courses of instruction:—

- (1) A five months' winter course for men, from November to April.

- (2) A three months' summer course for women, from May to August.

The people who attend are of all ages from 18 to 30, come from all classes of society and usually have previously only attended an Elementary School, which they left at the age of 14. Most of the students will be the sons and daughters of farmers, but there will also be the sons and daughters of agricultural labourers and of the country clergy, and although the schools are always situated in the country there has recently been a tendency for townsmen, and especially townswomen, to attend the courses. Thus all classes, farmers' sons and labourers' sons, townsmen and countrymen, take the course together. The subjects taught include Danish history, the World's history, Danish literature, the World's literature, arithmetic, reading, writing, gymnastics, singing, &c. The women's courses also include instruction in embroidery and dressmaking. A special feature is always made of gymnastics, and an hour every morning is devoted to compulsory physical exercises, both for men and women. There is no technical teaching nor is any examination held nor certificate awarded at the end of the course. The usual fees are £5 per month. Prospective pupils who cannot afford to pay the full fees can apply for State scholarships which cover half the cost.

The writer had the fortune to visit the Askov Folks' High School when the women's summer course was in progress. The students get up at 7 a.m., have breakfast at 7.30, and receive instruction from 8 to 12 o'clock, when dinner is served. Work is resumed from 1.30 to 3 p.m., when there is an interval of a quarter of an hour for coffee, and then again from 3.15 to 7 p.m. with two short breaks of a quarter of an hour at 4.15 and 5.45. This is a typical day's work, and Saturday is the same as other days, for there is no half-holiday. In addition to this the students have exercises to do in their free time. Each lesson is opened and closed by the singing of a national song, as it is claimed that this draws the pupils together and creates the right atmosphere. No day students are admitted—daily association is an essential part of the course. Close sympathy is necessary between the instructor and his pupils, and the personality of the teacher is a matter of prime importance.

In spite of the fact that these are comparatively expensive courses, that there is no technical training, no higher wages to be earned afterwards through having attended the course, and a very strenuous course too, there is an enormous demand for this class of education, and about 10 per cent. of the whole population of Denmark passes through a Folks' High School course. At this particular school no fewer than 600 applications for last

winter's course and 200 applications for this summer's course had to be refused. The schools have been described at some length because they illustrate the surprising demand for education that seems to exist naturally among all classes of the Danish people, and this demand will show itself again and again as this article proceeds. There seems to be a strong movement for education and advancement, woven with a desire for liberty of action, naturally ingrained in the Danish national character. The principles underlying the Folks' High School movement could surely be applied with advantage in the Continuation Schools now being established in this country.

#### SCHOOLS FOR SMALL HOLDERS.

At Odense the writer was able to see one of the three Schools for Small Holders that exist in Denmark. This particular School is intended to cater for the sons and daughters of small holders, and can accommodate about 75 pupils.

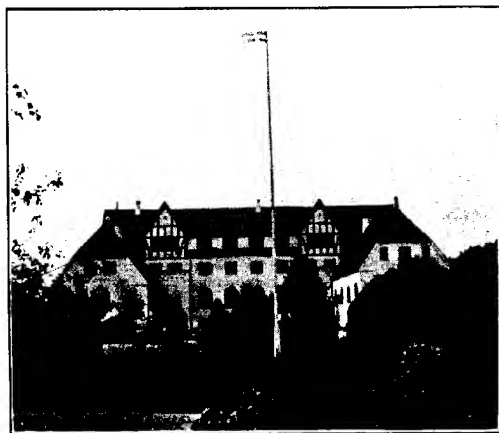


FIG. 1.—Small-holders' School, Odense.

The instruction given is not purely technical, but an attempt is made to combine general education as given at a Folks' High School with the teaching of an Agricultural School; in fact, they are specialised Folks' High Schools giving technical instruction in agriculture. All pupils before taking a course have had at least three years' practical experience of farm work, and the majority of them have had no other education than that which they received in the village school. Most of the students at an

Agricultural School, on the other hand, have usually attended a course at a Folks' High School previously.

The average age of the students of the Small-holders Schools is 24 or 25. They seem to come of their own free will, without pressure from their parents; in fact, they save up their money to enable them to take the course. They frequently take a course just previously to starting on a farm or small holding of their own. They are no longer schoolboys, but realise the value of what they have come to learn, and settle down to their work accordingly. The Principal of the School at Odense is strongly in favour of students getting a taste of their future profession before completing their education or obtaining technical training, and he does not like students to come under the age of 20.

As a rule the students have very little money and cannot afford to pay the full fees of £4 to £5 per month. About two-thirds of them are therefore in receipt of scholarships from the State, covering half their expenses. Applicants for these scholarships have to fill in forms setting out their parent's income, the size of his farm, number of dependents, &c., and this application goes before the local Council, and from there to the State Board of the County Council, who act as agents of the State. If it is supported by the local Council the application will be successful. The State will never pay more than half the fees, as it is maintained that a student will take his work more seriously if it has involved some sacrifice to himself; in fact, he would never go to the school under these circumstances unless he meant to profit from it.

The courses of instruction at the Small-holders' School at Odense may be classified as follows:—

- (1) A five months' winter course for men (November 1 to April 1).
- (2) A three or five months' summer course for women (May 1 onwards).
- (3) One or more one-month courses for Milk Recorders.
- (4) Six-day, eleven-day, or one-month courses in various subjects for men and women.

There were 75 students attending last winter's course for men and 43 students attending the summer course for women which was in progress at the time of the writer's visit.

#### (1) *The Five Months' Winter Course for Men.*

The syllabus for this course includes instruction in Danish History and Literature, Sociology and Social Economy, Gymnastics, Arithmetic, Chemistry and Physics, Soil Study, the Improvement of Soils, Implements, Land Measurement, Plant

Life, Weeds and their Destruction, Rotations, Manuring, Anatomy and Physiology of Domestic Animals, the Judging of Live-stock, Animal Breeding, Feeding and Management, Diseases of Animals, Farm Accounts, Fruit-growing and Poultry-keeping.

Excursions are occasionally made to neighbouring farms, but no practical farm work is included in the course, and the farm attached to the school is run solely as a source of revenue. No experiments are carried out on it, but the livestock are useful for lessons to the students in judging, and the crops and general management of the farm are available for inspection.

### *(2) The Summer Course for Women.*

The women who attend this course are mainly the daughters of small-holders, but none of the courses are exclusive. Some of the men students taking the men's courses and some of the women taking the women's courses come from larger farms and mix with the sons and daughters of the small farmers. The students of different classes live together, even for the short courses, and the mixing of them together is held to be of great benefit.

The women students are not taught much agriculture, as the women do very little practical farm work in Denmark except to help at harvest time and in the busy hoeing season, nor do they need to learn the making of butter and cheese as this is always made by fully-trained men in the creameries. The women's course is therefore devoted mainly to instruction in cookery, dressmaking, &c., and the general education subjects taught in the Folks' High Schools. Every woman student, however, is given a small garden plot of 6 yards by 5 yards on which she is taught to grow various kinds of vegetables.

As with the men students, the working hours are from 8 a.m. to 12 noon (one class in the morning will always be Gymnastics), with 10 minute intervals at the end of each hour, 1.30 to 2.30 p.m. and 3 to 6 p.m. On Saturdays work ceases at 5 p.m.

### *(3) Courses for Milk Recorders.*

There are 636 milk recording societies in Denmark and there is a constant demand for qualified male or female milk recorders. There is usually a one-month's course in April and another in October. The course includes instruction in the weighing of milk, testing with the Gerber Tester for butter fat, the keeping of milk and food records and the calculation of the amount of butter that would be obtained from each cow's milk supposing it were used for butter-making. An examination is held at the end of the course by an outside body of examiners, on the results of which certificates of proficiency are awarded.

(4) *Six-day, Eleven-day and One-month Courses.*

These short courses centre round instruction in such subjects as seed-testing, artificial manures, weeds and their eradication, grasses and clovers, poultry keeping, fruit growing, &c. Sometimes the courses are for men and sometimes for women, these being generally kept separate and held at different times. Nine or ten of these courses are held every year in this particular school, but in some schools as many as twenty courses may be held in a year, whilst one school devoted almost entirely to eleven-day courses is very largely attended. There are altogether ten or twelve different schools in Denmark holding these short courses. It is not possible to teach much in such a limited time, but discussions are held on subjects connected with the pupils' everyday life, and it is claimed that the pupils go home with new ideas and new interests, whilst the mere bringing of the people together has been found to have beneficial results in many directions. The cost of these courses is borne almost entirely by the State.

The staff of the school consists of a number of part-time persons who earn a part of their livelihood in other ways. Some of the members of the staff teach at the school in the winter and are employed as peripatetic expert advisers by the Smallholders' Society in the summer.

Attached to the school are 10 acres of land run by the Smallholders' Society as an experimental orchard, and this is in charge of one of the members of the school staff. There is also attached to the school a large building containing specimens of numerous kinds of up-to-date farm implements under the charge of another member of the staff. Small-holders come and inspect these implements and are able to get an unbiased opinion of the relative merits of the different makes before making a purchase. Implements to the value of about £7,000 are sold every year in connection with this display of implements, and during the summer between 3,000 and 4,000 small-holders visit the school, the implement collection and the experimental fruit orchard.

The poultry pens attached to the school are used as a breeding station for distributing sittings of eggs under a scheme similar to the English egg-distribution scheme. Trap-nesting is encouraged by the holding of annual egg-laying competitions. The successful competitors are selected as breeding centres for the following season, and in return for a subsidy from the State send out sittings of eggs to small farmers, &c., at reduced prices. All the eggs sent out under this scheme must be from trap-nested stock.

## THE AGRICULTURAL AND DAIRY SCHOOLS.

There are nearly thirty agricultural schools in Denmark, all privately owned and taking on an average about 100 students each. The writer was able to visit two of them, the Agricultural and Dairy School at Dalum, which is considered the leading school of its class, and the Ladelund Agricultural and Dairy School.

The Dalum Agricultural and Dairy School was raised to its present high standard of efficiency by Mr. Jergen Petersen, and when he died in 1908 the school was purchased by the Past Students Association. The principal of the school is responsible to this Association, and it is of interest to note that last spring Mr. Madsen-Mygdal, the principal, was selected by the Prime Minister to be his Minister of Agriculture. Mr. Madsen-Mygdal is now a member of the Danish Cabinet with a seat in the *Landsstinget* (House of Commons).

As in the case of the small-holders' schools, all students are required to have had at least 3 years' practical experience on a farm before attending an agricultural school. They vary in age between 18 and 30, but they are not encouraged to come before they are 20. They are expected to have had a good general education and most of them will already have passed through a course at the Folks' High School. The teaching is therefore entirely confined to the sciences connected with agriculture.

There are about 100 acres of land attached to the school, but this is farmed solely as a source of profit and no experiments are carried out except an occasional small trial conducted by a research student. The students do no practical work on the farm, nor even any practical work in carpentry or iron work.

The students come from farms of all sizes, from small holdings up to large estates, but the majority of them from farms of 30 to 100 acres. Some of them may have already passed through a small-holders' school. The inclusive cost of the course is £4 to £5 per month, and students who cannot afford to pay the full fees make an application for a scholarship in the way already described. Usually about one-third of the students at the agricultural schools are holders of scholarships covering half the cost of the course. The schools receive no direct help from the State except a very small grant of £50 to £125 a year, varying with the size of the school.

The present equipment at Dalum includes a large lecture theatre, two smaller lecture rooms, two plant-breeding rooms, a bacteriological laboratory with three microscopes, a small chemical laboratory with one good balance, a small natural history museum, a large gymnasium, a large implement demonstration shed, and a good football ground.

There are two main courses of instruction given at Dalum, (1) the agricultural course and (2) the dairying course. Only male students are accepted as a rule for either course, though very occasionally there may be a female student, in which case she will usually lodge with one of the members of the staff. The students attending the two courses are kept quite apart, so it is desirable to consider the two courses separately.

(1) *The Agricultural Course at Dalum.*

Up to the present time the agricultural course at Dalum has been a six-months' course from November 1 to May 1, and in the summer there has been a three-months' continuation course for those students who desired to stay on longer. During this continuation course each student has a particular subject to specialise in and may carry out some investigation work on the farm attached to the school, but he does not do any ordinary manual work.

The students are divided into four groups for gymnastics, book-keeping, drawing and arithmetic, three groups for Danish composition and two groups for *viva voce* examinations.

Every pair of students shares a bed-sitting room. They get up at 7 o'clock, put their rooms in order, and have coffee at 7.30. Lectures start at 8 o'clock and there are four hours of instruction, one of which will be in gymnastics, from 8 to 12 o'clock, with ten-minute intervals between each. Then comes dinner at 12 o'clock and the students are free until 1.30. Then come two more hours of instruction from 1.30 to 3.30, half an hour for coffee, and two more classes from 4 to 6 p.m., when supper is served. Thus there are eight hours of indoor work a day, including an hour of physical exercises—say seven hours a day. On Saturdays work ceases at 3.30.

The number of hours of instruction given in each subject in the agricultural course is as follows:—

	Hours		Hours
Danish Language . . . . .	28	Seeds and Seed Testing . . . . .	8
Drawing . . . . .	30	Implements . . . . .	31
Sociology . . . . .	17	Farm Crops . . . . .	56
Arithmetic . . . . .	48	Book-keeping . . . . .	64
Physics . . . . .	50	Surveying and Levelling . . . . .	14
Inorganic Chemistry . . . . .	60	Dairying . . . . .	16
Organic Chemistry . . . . .	20	History of Agriculture . . . . .	24
Botany . . . . .	34	Farm Economy . . . . .	28
Study of Soils . . . . .	28	Judging of Livestock . . . . .	33
Draining, Liming, &c. . . . .	20	Anatomy . . . . .	36
Meadow and Moor Cultivation . . . . .	10	Feeding of Livestock . . . . .	34
Manures . . . . .	55	Horses . . . . .	24
Rotation of Crops . . . . .	4	Cattle . . . . .	38
Tillages . . . . .	19	Pigs . . . . .	14
Weeds and their Eradication . . . . .	12		



It is interesting to note that more time is devoted to book-keeping than to any other subject. Up to the present practically no laboratory work has been done by the students, but in future it is proposed to replace the six-months' course with a nine-months' course which will include a considerable amount of laboratory work. The classes will be smaller and laboratory instruction will be given in chemistry, botany and bacteriology. The school will then only be able to take 120 students instead of 180. It has always been recognised that a six-months' course is not long enough, but the difficulty in retaining students during the busy summer months has up to the present been considered insuperable. However, the increased attendance at the continuation course has encouraged the school now to make a definite effort to lengthen the course so that fuller instruction and more individual attention may be given, and more practical work done with living plants.

(2) *The Dairying Course at Dalum.*

Up to the present this has been an eight-months' course (October to May) for men who have already had at least four years' practical experience in a creamery. No practical instruction is given in either butter or cheese making; the students are expected to know that part of the work before coming to the school. The hours of work are the same as for the agricultural students.

When the students first arrive they are set an examination in arithmetic, and as a result of this examination they are divided into different classes for arithmetic and Danish. In both the agricultural and the dairying courses about one hour in every four is devoted to questions and answers in the different subjects of instruction, a kind of *viva voce* examination.

The number of hours of instruction given in the different subjects is as follows:—

	Hours		Hours
Danish Language . . . .	52	History of Dairying . . .	13
Drawing . . . . .	46	Anatomy . . . . .	48
Arithmetic . . . . .	72	Foods and Feeding . . .	58
Physics . . . . .	50	Book-keeping . . . . .	66
Inorganic Chemistry . . .	56	Creamery Accounts . . .	25
Organic Chemistry . . . .	26	Creamery Machinery . . .	60
Bacteriology . . . . .	77	Dairying . . . . .	120
Practical Work in Chemistry and Bacteriology . . . .	62		

There are no diplomas nor certificates awarded at the end of the agricultural courses, as the students merely return to their farms, but at the end of the dairying course a final examination is held and certificates of proficiency are awarded. These certificates enable the holders to improve their position in the creameries.

*(3) The Agricultural Courses at Ladelund.*

The Ladelund Agricultural and Dairy School, which was also visited by the writer, is very similar to the school at Dalum, the only difference being that the agricultural course is of five months' duration (November to March) instead of six months, with a four-months' summer continuation course (April to July). At this continuation course, which may only be attended by students who have attended a winter course either at Ladelund or elsewhere, the same subjects are studied but in greater detail; there is practical laboratory work in chemistry and physics, some practical surveying, judging of livestock, excursions to farms, &c. The students are also given written work to do. Questions are set them which they may answer after consulting books in the library; in other cases the questions have to be answered without help.

*(4) The Dairying Course at Ladelund.*

The dairying course at Ladelund is exactly the same as at Dalum, and the students take the same examination at the end of the course. These are the only two agricultural schools in Denmark that give a systematic dairying course.

*(5) The Milk Recorders' Course at Ladelund.*

Special short courses of instruction for milk recorders are given at the Ladelund Agricultural and Dairy School in addition to the longer agricultural and dairying courses. Both male and female students can attend this course, but they must have previously taken a course at a Folks' High School.

Some of these students will be sufficiently trained at the end of one month; others require two or three months. At the end of the course an examination is held, and four grades of certificates are awarded—excellent, very good, good and fair. This examination is the same for all schools where milk-recording courses are held, so that milk recorders throughout the country can be graded according to the certificates they hold. Milk recorders come from practically all classes of society—many of them are farmers' sons who have passed through an agricultural school and want a year's practical experience of different methods of cow-keeping before settling down on a farm of their own. Roughly, one quarter of the milk recorders in Denmark are women.

Up to 1912 similar special courses for milk recorders were held at Dalum, one in May and one in November, but all the information required by milk recorders can now be obtained in the three-months' summer course in dairying. At the end

of this course the same examination is held as at Ladelund, and certificates are awarded.

#### OTHER AGRICULTURAL SCHOOLS.

The writer did not see any of the other agricultural schools, but he was informed that they are very similar to those at Dalum and Ladelund. Some have as many or even more students, but the majority are smaller. The staff also is not normally quite so large—at Dalum the staff consists of 13 men—but the standard of teaching is considered to be nearly as high. The fees are practically the same at all the agricultural schools.

Some of the best of the students from an agricultural school pass on to the Royal Agricultural College at Copenhagen. No State scholarships can be obtained to the Royal Agricultural College. Scholarships can, however, be awarded to students at the Royal Agricultural College after they have been there six months on the recommendation of the professors of the College.

#### HORTICULTURAL SCHOOLS.

There are three Horticultural Schools in Denmark, one in the Province of Jutland, one in Funen, and one near Copenhagen. The writer was unable to see any of them, but was informed that they are very similar to the Agricultural Schools. Five or six month winter courses are held at these schools, with a voluntary continuation course in the summer.

#### THE ROYAL AGRICULTURAL AND VETERINARY COLLEGE, COPENHAGEN.

The Royal Agricultural and Veterinary College, established as a State institution in 1856, is the College in Denmark where the most scientific form of agricultural instruction is taught. It is a non-residential college, so that all the students have to live in lodgings in Copenhagen. It consists of a magnificently equipped set of buildings, with an excellent library of 60,000 volumes, museum, laboratories, lecture rooms, &c. It is now being very considerably enlarged, and it is expected that the extension will take at least four years to complete.

The College is situated in Copenhagen, and has no farm attached to it. The same rule is enforced as at the Agricultural Schools; that no agricultural or horticultural student may take the course until he has had at least three years' practical experience on a farm.

All instruction given in the College is based on the general knowledge presumed to have been acquired by the students at a secondary school. The normal education of boys at the secondary schools ends either at the age of 16, when they pass out

after sitting for an examination including at least two foreign languages (generally English and German), or at the age of 18, when they sit for an examination which gives admission to Copenhagen University. These two examinations

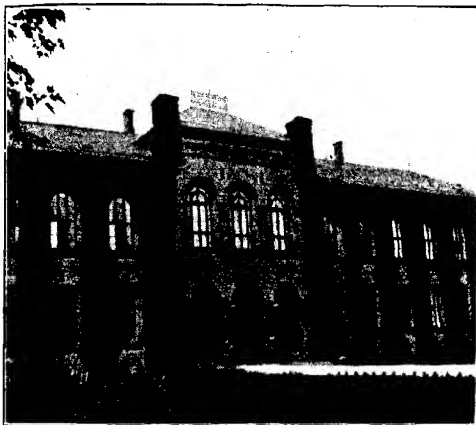


FIG. 2.—Royal Agricultural College, Copenhagen.

can also be taken by boys who have not attended a secondary school, but have been privately coached, and it is compulsory on all students wishing to take the veterinary, forestry, or land surveying courses at the Royal Agricultural College first to pass one of these examinations. Students for the agricultural or horticultural courses may at present be admitted to the College without having passed such an examination, but they are not eligible for scholarships and they have not the right to sit for the examination at the end of any of the four extension courses. From now onwards, however, it will be compulsory for all students in all courses to pass a qualifying entrance examination including two foreign languages.

No students can enter the College until they are 21 years of age. They have the choice of five different courses of instruction :—

1. The Veterinary Course.
2. The Forestry Course.
3. The Land Surveying Course.
4. The Agricultural Course.
5. The Horticultural Course.

It is intended shortly to add a sixth course—a Dairying Course. The students in all these different branches take

practically the same course during the first year. The Veterinary students study applied sciences in their second and third years and are engaged in practical work in their fourth and fifth years. The Forestry students study applied science in their second year, do practical work in their third year and more applied science in their fourth and fifth years.

It will be desirable to consider the Agricultural and Horticultural Courses in some detail.

(1) *The Agricultural Course.*

The Agricultural Course consists of two parts, the first part embracing instruction in the natural sciences and the second part in the applied sciences.

The first part of the course occupies 18 months and is divided into three terms, the subjects taught and the number of hours per week devoted to each being as follows:—

	1st Term. Sept. 1 to Jan. 31	2nd Term. Feb. 1 to June 15	3rd Term. Sept. 1 to Dec. 21
<i>Lectures.—</i>			
Physics and Meteorology . . . . .	5	5	—
Chemistry . . . . .	5	4	—
Agric. Chemistry . . . . .	—	—	2
Geology . . . . .	—	4	—
Botany and Agric. Botany . . . . .	4	4	2
Micro-Biology . . . . .	—	—	2
Study of Heredity . . . . .	—	—	2
Zoology . . . . .	5	1	—
Anatomy and Physiology . . . . .	—	3	4
Sociology . . . . .	—	—	5
<i>Practical Work.—</i>			
Chemistry . . . . .	9	9	—
Agric. Chemistry . . . . .	—	—	6
Physics . . . . .	—	—	2
Botany and Bacteriology . . . . .	1	3	6
Drawing . . . . .	6	6	—
Surveying and Levelling . . . . .	4	2	—
	39	41	31

At the end of the first 9 months (*i.e.* in June) examinations are held in Chemistry, Zoology and Geology, and these sciences are then finished with. In July the students spend a whole month in doing practical surveying and levelling in a large park about 4 miles out of Copenhagen, working every day with the chain, level and theodolite from 8 a.m. to 5 p.m., and they take the examination in the subject at the end of it. They then have 2 months' holiday, returning to their lectures on or about September 1. They take the examinations in the other subjects at the end of the third term, *i.e.* in December. Until a student has passed the examinations in all these subjects he cannot proceed with the second part of

the course. It is not usual for more than 50 per cent. of the students to pass successfully, and those who fail usually leave the College.

The second part of the course begins on February 1, and lasts 13½ months. There are three terms, February 1 to July 15, September 1 to January 31, and February 1 to March 15. The subjects taught and the number of hours devoted to each per week are as follows:—

	1st Term. Feb. 1 to July 15	2nd Term. Sept. 1 to Jan. 31	3rd Term. Feb. 1 to March 15
<i>Lectures.</i> —			
Agric. Zoology . . . . .	2	—	—
Plant Pathology . . . . .	2	2	—
Implements and Machinery . . . . .	3	3	5
Cultivation of the Soil . . . . .	5	5	2
Animal Breeding and Management . . . . .	4	5	2
Dairying . . . . .	2	2	1
Agriculture in other countries . . . . .	—	1	1
General Land Management . . . . .	4	5	1
Diseases of Livestock . . . . .	—	2	—
<i>Practical Work.</i> —			
Implements and Machinery . . . . .	2	3	—
Building Construction . . . . .	—	—	2
Soil Tillage and Plant Life . . . . .	—	3	1
General Land Management . . . . .	—	1	2
Dairying . . . . .	—	1	—
Agricultural Chemistry . . . . .	6	—	—
Judging of Livestock . . . . .	—	2	3
Diseases of Livestock . . . . .	—	—	3
	30	35	23

Four lectures are given every morning between 8 a.m. and 12 noon with 10 minute intervals between each. Twenty minutes are allowed for lunch, and then there are 2½ hours of laboratory work and another lecture from 3 to 4 p.m. At the end of the course the final examinations are held and those students who are successful receive a Diploma written in Danish, English, French and German.

In future it is intended to lengthen the course by another 12 months as well as to institute a compulsory entrance examination.

On the completion of the Agricultural Course, as set out above, there are four Extension Courses in—

- (a) Fundamental Sciences,
- (b) Plant Husbandry,
- (c) Animal Husbandry, and
- (d) Dairying.

Each of these Extension Courses commences every other year in September and closes with an examination 20 months later in March or April. No student may, however, sit for this examination unless he passed the qualifying exam-

ination when he first entered the College, and unless he obtained a First Class Diploma at the end of the normal 2½ years College Course.

The students who take the agricultural course are usually the sons (occasionally daughters) of farmers, large and small. About 90 per cent. of them have already passed through an Agricultural School. Those who fail in the examination at the end of the course generally return to their farms, while those who are successful in getting the diploma generally obtain posts afterwards as teachers or lecturers at Agricultural Schools, or as experts under an Agricultural Society.

The fees are purely nominal, about £1 per term with an additional £2 per term for laboratory expenses and another small charge for examination fees, but students have to pay for their own board and lodging. The College belongs to the State, and in the year 1919-20 the cost of the College to the State as a teaching institution was £22,250.

At the outbreak of the war there were 42 agricultural students at the College, last year 61 students took the examinations and this year there are 128 students. The number this year is unusually large because it is the last year for taking the old and shorter course without a compulsory qualifying examination.

### (2) *The Horticultural Course.*

The Horticultural Course is also taken in two parts. The first part is practically identical with the first part of the Agricultural Course and the students for the two courses work together. The second part is a 12 months' course from February 1 to January 15. It is divided into two terms, and the subjects taught, with the number of lectures given in each per week, is as follows:—

	1st Term. Feb. 1 to June 30	2nd Term. Sept. 1 to Jan. 15
<b>Lectures.—</b>		
General Horticulture . . . . .	4	3
Cultivation of Pot Plants . . . . .	3	2
Fruit Growing . . . . .	3	3
Cultivation of Ornamental Plants . . . . .	3	—
Nursery Work . . . . .	—	3
Cultivation of Useful Plants . . . . .	—	3
Greenhouse Work . . . . .	2	—
Horticultural Botany and Plant Diseases . . . . .	5	2
Horticultural Zoology . . . . .	2	—
Book Keeping . . . . .	—	4
<b>Practical Work.—</b>		
Practical Chemistry . . . . .	6	—
Practical Botany . . . . .	2	—
Designing of Gardens . . . . .	6	6
Other Gardening Operations . . . . .	2	2

The Danish Government Seed Testing Station, which last year tested 24,400 samples of seed and is very nearly self-supporting, is situated in the grounds of the Royal Agricultural College, but is quite an independent station, with its own directors. There are, however, two institutions which are attached to the Royal Agricultural College and which merit consideration, namely, the Agricultural Experiment Laboratory and the Serum Laboratory.

*(3) The Agricultural Experiment Laboratory.*

The Agricultural Experiment Laboratory has carried out and is carrying out a great deal of experimental work throughout the whole of Denmark in connection with the manufacture of butter and cheese, the feeding of livestock, the curing of bacon, &c. It started in 1875 with a series of experiments, carried out at the request of practical farmers, with a view to finding out how dairymen should store their ice, and later on as to how the creameries could best make use of their ice. Experiments were carried out in numerous creameries throughout the country, and the whole policy in relation to experimental work has always been to carry it out on the farms and the creameries themselves, under conditions that correspond exactly with those under which the results are intended to be applied. It was largely due to experiments carried out by this laboratory that cream separators were introduced so quickly into Danish creameries, and that every creamery provided itself with a pasteuriser and a cooler, and began to use selected starters for acidifying the cream.

The laboratory is also useful to the creameries by reporting to them on the quality of their butter. To begin with, the creameries used to ask for these reports to be made, but now it is laid down by Act of Parliament (1911) that all creameries *must* send samples of their butter to the laboratory whenever they are called upon to do so, and if the report on the butter is unsatisfactory the creamery is forbidden to export any further butter until a satisfactory report is received.

The Danish method of valuing feeding stuffs according to the number of feeding units was evolved as a result of numerous feeding experiments, carried out under the guidance of the laboratory by farmers, on their own cows, in their own cowsheds, and under everyday conditions. It was also due to experiments carried out under similar conditions that the Danish farmer has now developed the practice of growing mangels on a large scale as a winter food for his cows.

The motto of the director of the Agricultural Experiment Laboratory is "Keep always close to the farmer," a motto



which might perhaps with advantage be followed more closely by some of the research stations in this country. It may be argued that experiments carried out in this way on commercial farms instead of under strictly scientific conditions cannot give such accurate results as they would if they were carried out in a cowshed adjoining the laboratory and under the Director's own immediate supervision, but on the other hand the loss in accuracy can usually be counterbalanced by repeating the same trial on a very large number of cows and on numerous farms, instead of only on a few cows and in a single cowshed, whilst the farmers' confidence in the results is much more quickly won when they see the trials actually carried out under ordinary farm conditions. All experiments are, therefore, carried out, as far as possible, in commercial creameries and on ordinary farms. The necessary materials are placed by the owner at the disposal of the laboratory free of charge, but the latter pays all the expenses directly connected with the experiments.

The whole of the work carried out by the laboratory is paid for by the State; the grant received for the year 1920-21 amounted to about £17,000. There is no creamery nor cowshed attached to the laboratory; the equipment consists solely of administrative offices, chemical, bacteriological and physiological laboratories, store-rooms, &c. It was in the bacteriological division that Professor Bang carried out his famous researches that have laid the foundation for the fight against tuberculosis in cattle.

In order to keep the work of the laboratory as closely in touch as possible with practical agriculture, representatives of practical dairy managers and farmers are invited to meetings which are held at regular intervals to receive reports of the work done, and to discuss future experiments. To make the collaboration between the laboratory and the practical farmers still more complete, two Commissioners have recently been appointed, one for the creamery work and one for the animal husbandry work, both sound business men, who have had a scientific training. These two Commissioners are more easily brought together than the large committee, and it is their duty to suggest to the laboratory new objects for experiment and to approve of experiments proposed by the laboratory.

The physiological division of the laboratory has recently been equipped with a respiration chamber and apparatus, erected just before the war, at a cost of about £2,500. With the aid of this apparatus researches can be made to determine, with absolute accuracy, how animals utilise their food, and to elucidate innumerable problems in connection with animal nutrition. This is the only respiration chamber that has yet been built to take a cow, and there are many ingenious contriv-

ances for feeding the animal, milking her and collecting the milk, liquid urine and solid excreta, without opening the air-tight chamber.

(4) *The Serum Laboratory.*

This laboratory is used for the production of vaccines for the prevention and treatment of animal diseases, such as white scour in calves, swine erysipelas, broncho-pneumonia and septic-pneumonia in calves, strangles in horses, joint-ill in foals, lock-jaw, &c. These vaccines are produced on a large scale, and a stable containing several horses, which are periodically inoculated and after a certain time tapped at the jugular vein for the blood from which vaccines are made, is attached to the Laboratory. The vaccines, when prepared, are sent out to all parts of Denmark, and sold at very low rates. The Laboratory is State-supported, and cost the State in 1919-20, £2,200.

THE STATE AGRICULTURAL EXPERIMENT STATIONS.

There are six Agricultural Experiment Stations in Denmark belonging to the State, and the writer was able to visit five of them. These stations are as follows :—

Place	District	Size acres	Soil	Specialty
Lyngby	E. Seeland	130	Clay Loam	Weeds and diseases of plants.
Tystoite	W. Seeland	80	ditto.	Plant breeding. Clover and grass seed production.
Aarslev	Funen	85	ditto.	Production, storage and use of farmyard manure.
Askov	S. Jutland	60	Loam	Rotations and soil treatment.
		145	Sand	Dung compared with Artificial.
		14	Moor	Cultivation of heath land.
Studsgaard	S. Jutland	150	Sand	Experiments with soiling crops.
		110	Moor	Cultivation of high moor.
Tylstrup	N. Jutland	220	Moor	Experiments with draining, liming and common fertilisers.
		90	Sand	Potato breeding.

There are also two small branch stations in Lolland and Bornholm.

The administration of the State Experiment Stations is done by a State Committee (the Planteavlssudvalg) consisting of five members elected respectively by the Royal Agricultural Society of Denmark, the Associated Agricultural Societies of Denmark, the Royal Agricultural College, Copenhagen,

the Co-operative Danish Small-holders Societies and the Co-operative Danish Horticultural Societies, and approved by the Ministry of Agriculture. This Committee forms the connecting link between the Ministry of Agriculture and the Experiment Stations, approves the schemes of experiments laid before it, publishes the reports and Journal (*Tidskrift for Landbrugets Planteavl*), and supervises generally the whole of the work.

Each station is under the charge of a Director and there is a Central Committee composed of the Director from each station which prepares the experiment programme of each station for submission to the State Plant-Breeding Committee. In many cases the same experiment is carried out at several different stations and extends over a series of years, e.g., experiments which are of interest to the whole country and not merely of local interest, and in these cases the Committee of Directors nominates one person to be responsible for the whole series of experiments and it is his duty to superintend them, collect the results, and write up the report on the particular trial as soon as it is completed. The *Tidskrift for Landbrugets Planteavl*, of which the Secretary of the State Plant-Breeding Committee is editor, is issued five or six times a year, each number containing 150 to 200 pages, and in this journal the results of the experiments are published. This journal is sent out to all subscribers of 7s. 6d. per annum.

The results of the more important experiments are also published separately in book form as reprints, and short reports are issued for distribution at farmers' meetings, for use in the Agricultural Schools and for publication in the daily and agricultural newspapers.

At all the Experiment Stations the size of the experimental field plots is always very small, usually only 30 square yards, but each plot is duplicated at least six times. There are thus an enormous number of plots on each farm. At the Aarslev Station, for example, there are no fewer than 2,976 different plots on the 85 acres of land. Each of these has to be dealt with separately and a staff of 18 labourers is necessary. It is claimed, and probably with truth, that these small plots duplicated many times give more accurate results than larger plots because the soil conditions are more similar and there is the further important advantage that a very large programme of experimental work can be concentrated in a small acreage. The outside row of each plot is always discarded.

The total expenses of the State Experiment Stations in 1917-18 were roughly £33,000; of this sum £20,000 was recovered in sales, and the deficit of £13,000 was made good by the State. In 1919-20 the deficit was approximately £20,000.

Space prohibits the writer from going in detail into many of the interesting experiments that were seen in progress at the State Experiment Stations. The majority of them are of more than local interest and are continued over a series of years; experiments of purely local interest, such as simple manurial trials, are as a rule left to the Local Agricultural Societies for their field trials on private farms (*see* page 90).

At four different stations the writer saw varieties of mangel seed submitted by 24 different seedsmen being grown on these small plots, 6 yards by 5 yards, ten or twelve times duplicated. The seed is sown at double the usual rate so as to ensure getting a good plant and no misses, the plants being thinned out later to the proper distance apart. The resultant crops are weighed, the roots sampled and analysed, and the results calculated out in tons of dry matter per acre. This experiment extends over two seasons and then the results from the different stations are brought together and those varieties that have given the worst results are discarded. The seedsmen selling the strains that have given the best results are asked to send in a further sample of the same stock so that in the third year two samples of each of the better strains may be tested. At the end of the third year the names of the strains that have given the best results are published. Originally the trials only lasted 1 year, but from 1911 up to the present time each trial has been carried over 3 years at several stations before any results are published. In future it is intended to carry each trial over 4 years before publishing the results; after the second year the inferior strains being rejected and two new samples of each of the better ones being grown for 2 years in their place. The names of the owners of the rejected strains are not published, but the practical result of these trials is that only seed of strains that come out well in them remain on the market. Imported seed has been proved inferior to the best strains produced in the country. Instead of the innumerable varieties of mangel that used to be on the market a few years ago there are now only about six varieties, no imported seed is used, and the average yield of the mangel crop throughout Denmark has increased from 16 tons to 21 tons per acre.

Variety trials are a common feature of all experimental programmes, but in Denmark this subject of investigation is carried further by trials not merely of varieties, one against another, but of different strains of the same variety, many of which were first produced at one of the State Experiment Stations. A great deal of work of this nature has been done with wheat with the result that the average wheat crop in Denmark has risen since 1895 from 31 bushels to 43 bushels per acre. Very little work, on the other hand, has at present been done on

barley and oats and in consequence the average yield of these crops has remained stationary during recent years.

A great deal of work has been done at the State Experiment Stations since 1908 on the production of grass and clover seeds. Formerly Denmark used to import most of her seeds from abroad, but it has now been found that home-grown grass and clover seeds are better than the imported, especially since new strains of cocksfoot, rye grass, timothy and other grasses and clovers have been bred, and improved by careful selection. The practical result of this work is that whereas in 1895 Denmark imported 9,000 tons of grass and clover seeds at a cost of £360,000, in 1919 there were no less than 78,000 acres of land in Denmark devoted to the production of clover and grass seeds, and she now has a very large export trade.

Another series of trials that has been carried out simultaneously at several of the Experiment Stations has been a trial of various clover and grass-seed mixtures to get the heaviest crop in a 2-years' ley. As a result of these trials there are now two or three standard mixtures for different types of soil and these are practically the only ones found in use in Denmark.

A useful piece of work carried out by the State Experiment Stations is in connection with checking the purity of the seed of root crops exported abroad. An arrangement has been made with the seedsmen by which before shipment of the goods an authorised weigher draws three samples, one for the purchaser, one for the seller and one for the State Root Seed Commissioner. The latter sample is sown at one of the State Stations and if later on a complaint is received from the purchaser as to the pedigree or purity of the strain, the crop in the testing plot affords a valid proof of the quality of the seed that was sent out.

The experiments with farmyard manure at Aarslev are particularly interesting. Cow manure is used for the experiments, and although there is a group of cows for each experiment the cowshed is fitted up so that the solid manure as well as the liquid manure of each individual cow is kept separate. Similarly the food fed to each individual cow is weighed and analysed and the comparative analyses of the droppings from each cow at once detect any abnormal cows. Special pits have been made in concrete, each  $3\frac{1}{2}$  ft. by 4 ft. by 6 ft. to receive the manure, one for each cow, and the liquid manure in most cases is stored separately in an airtight tank underneath. The contents of each pit are then applied to separate plots of land. In this way the experiments are designed to test the effects of feeding various amounts of cake on the composition and crop-producing power of the dung, the best amount of litter to use,

the best method of storing the dung, the best time to apply it to the land, the effect on the crop of different-sized dressings of dung, the effect on the crop as compared with artificial manures, &c.

At Studsgaard there were some interesting experiments showing that certain strains of swedes are more resistant to finger-and-toe than other strains and other experiments to find out the quantity of lime or chalk required to prevent the disease. The soil at this station is of a very light sandy nature and some very interesting experiments in green manuring were in progress. It has been found, for example, that a seeds mixture of kidney vetch and grasses mown for hay and then ploughed in, with a nitrogenous manure applied to the succeeding corn crop, gives a more economical return than ploughing in green lupins.

#### THE STATE HORTICULTURAL EXPERIMENT STATION.

There are three Horticultural Experiment Stations in Denmark, one of 70 acres at Esjberg, one of 150 acres at Odense, and one of 80 acres in the North of Jutland at Aalborg, but the writer was only able to visit the one at Esjberg, a part of which was originally run by the Local Agricultural Society until the State took it over and extended it in 1909. It is intended shortly to start another station near Copenhagen for greenhouse work.

These stations are devoted to testing and experimenting with fruit trees, bush fruit and vegetables, and some plant-breeding is also being done. Denmark is behind the commercial fruit-growing districts of England in horticulture, and the experiments were devoted mainly to trials of different varieties of apples, gooseberries, currants, raspberries, strawberries, potatoes, beetroots, tomatoes, podding peas, &c.

A systematic survey is being made of the whole of Denmark to find out what varieties of apples are being grown by farmers in different localities, in what quantities and with what success. As soon as this survey is completed it is intended that the most commonly grown and the most popular of these varieties shall be tried side by side at the State Horticultural Experiment Stations.

#### AGRICULTURAL HISTORY MUSEUMS.

Attached to the Agricultural Schools at Dalum and Ladelund and at Lyngby are three Agricultural Implement Museums, the property of the State, which the writer was able to visit. These Museums contain most interesting historical collections

showing the gradual development of ploughs, wagons and other agricultural implements used in the olden days, with pictures, models, and charts illustrating the development of Danish agriculture. They are open to the public on Sundays and are visited by a large number of people, especially in the summer months. The cost to the State of maintaining these



FIG. 3.—Interior of Agricultural History Museum, Dalum.

Museums amounted in 1919-20 to £1,500. It seems a great pity that there is not at least one Agricultural History Museum in England; there is yet time to collect together, in good condition, many of the old wooden implements that were used in the days of our forefathers. Wales, it should be noted, has already laid the foundations of such a collection at its National Museum.

#### THE WORK OF THE LOCAL AGRICULTURAL SOCIETIES.

Denmark is famous for its co-operative methods and for the work of its Local Agricultural Societies. There are altogether 137 Local Agricultural Societies, with 114,184 members, and these are amalgamated in each province (Jutland, Seeland,

Funen, Lolland-Falster, and the Isle of Bornholm) into Provincial Agricultural Societies, whilst the five Provincial Agricultural Societies are brought together into one Associated Agricultural Society. In addition to this Society there is the Royal Agricultural Society of Denmark which will be dealt with separately (*see* page 97), the Associated Small Holders' Society (74,000 members), the Danish Farmers' Association or Dansk Landmandsforening (a partly political body with 35,000 members started in 1917), the Farm Account Society (1,350 members), and almost innumerable co-operative societies with single definite objects such as:—

*Livestock Societies, e.g.*—340 Horse Breeding Societies with 29,000 members, 1,116 Bull Societies with 26,800 members, 636 Milk-recording Societies with 15,000 members, 1 Poultry-raising Society with 11,000 members.

*Manufacturing or Sale Societies, e.g.*—1,235 Co-operative Dairies with 180,000 members, 48 Co-operative Bacon Factories with 156,000 members, 550 Egg-export Societies with 45,000 members.

*Supply Societies, e.g.*—1,600 Co-operative Stores with 244,000 members, 1,280 Feeding-stuffs Societies with 70,745 members, 2 Artificial Manure Supply Societies with 73,000 members.

*Cultivation Societies, e.g.*—2 Potatoes Cultivation Societies with 18,200 members, 8 Sugar Beet Cultivation Societies with 6,930 members, 1 Danish Heath Society with 9,400 members.

*Insurance Societies, e.g.*—1,050 Livestock Insurance Societies, 14 Hail Insurance Societies with 78,000 members, 7 Storm Insurance Societies with 91,900 members.

*Credit Societies, e.g.*—168 Short Loan Societies with 21,600 members, 1 Danish Co-operative Bank with 15,000 members.

The Local Agricultural Societies co-operate with the above societies and their work can be classified under the following headings:—

1. The carrying out of Field Experiments.
2. Lectures and Demonstrations.
3. Cost Accounting.
4. Livestock Shows.
5. The granting of premiums for the best cultivated farms, especially small farms, and the organising of excursions.
6. The encouragement of various Associations for special purposes.

The Local Agricultural and Small Holders' Societies carry out a very considerable amount of agricultural education work of their own, employing their own scientific experts for the purpose. The Jutland Provincial Agricultural Association, for example, has a small 20-acre experiment farm of its own where four full-time experts are employed on plant-breeding, and in addition there are employed 60 local scientific agricultural and horticultural advisers in different parts of the province.



The other provinces are very much smaller than Jutland, and between them they employ about 45 scientific experts. Most of these experts are engaged exclusively by the Agricultural Societies, but some are engaged conjointly by the Agricultural and the Small Holders Societies and about 10 are engaged exclusively by the Small Holders Societies. They are often old Royal Agricultural College students and are employed full time in educational work, giving lectures, organising field trials, arranging educational exhibits at shows, organising implement demonstrations, &c. In a very few cases they are part-time men, in which case they usually have a small farm of their own which occupies their attention when they are not being employed by the Society.

The State is prepared to pay half the cost of all educational work carried out by the Agricultural or Small Holders Societies so long as the society pays the remainder, and the State is content to exercise very little control over them. No doubt it is argued that if the farmers are prepared to pay half the expense themselves, it is a sufficient guarantee that good and useful work is being done. Formal plans of the experiments, &c., contemplated, should in theory be submitted in writing to the State before the work is started, but in practice an invitation is merely sent for a representative of the State to attend the meeting of the Agricultural Society when the year's programme is being discussed. At the end of the year the society submits an account showing the salaries of their experts and the cost of their work, and payment to the extent of one-half of this account is then made.

*(1) The carrying out of Field Trials.*

All field trials are set out by the local expert personally, and he is present at the end of the experiment when the crops are being weighed. The number of local field experiments carried out by the Agricultural Societies during recent years is as follows:—

Five Years	Fertiliser Trials	Other Trials	Total
1896-1900	849	31	880
1901-1905	3,856	534	4,390
1906-1910	7,287	3,430	10,717
1911-1915	8,497	3,737	12,234
1916-1920	7,800	3,711	11,511

The number of local field experiments is now 2,000 to 3,000 annually. Largely as a result of these demonstration plots the value of the annual import of artificial manures into Denmark

has increased from £145,000 in 1900 to over £1,100,000 in 1914 as the following statistics of the Danish import of fertilisers and raw materials for the production of fertilisers will show :—

	Nitrates	Phosphates	Potash	Total Value *
	Tons	Tons	Tons	
1900	5,700	33,800	11,200	161,000l.
1905	12,100	68,000	13,800	317,000l.
1910	26,400	99,000	14,000	583,000l.
1914	54,000	203,000	23,700	1,244,000l.

\* Pre-war rate of exchange, 18 kroners to the pound sterling.

At the end of each year an annual joint meeting is held in each province of all the Local Agricultural Societies in the province that have carried out experimental work. The results are presented to the meeting in a collective report and plans are made for the next season's experiments. These provincial meetings are followed by a meeting where representatives from each province meet the State Plant-Breeding Committee and the directors of the State Experiment Stations, and at this meeting the whole of the experimental work that has been carried out in the country is brought together and discussed.

### *(2) Lectures and Demonstrations.*

The experts are required to give lectures to meetings of farmers and usually these take the form of single lectures given four or five times a year at the Society's meetings. Sometimes short courses of instruction are arranged. A course lasting over a fortnight may be held at convenient centres where systematic instruction can be given. There will as a rule be two lectures a day and a 2-hours' lesson in the keeping of farm accounts. Latterly some of the Local Agricultural Societies have organised implement demonstrations for their members.

### *(3) Agricultural Costings.*

A recent development of the work of the Agricultural Societies has been in cost accounting. The first sporadic experiments made by local societies comprised only a few branches of farming industries and were not supported by systematic balance sheets, but since 1910 these investigations have been carried out in a complete and reliable manner by expert accountants employed and paid by the societies. There are a few Farm Costings Societies working independent of the Local Agricultural Society, but

as a rule the cost accounting will be under the direct control of the agricultural society in the district. The State gives financial assistance on condition that :—

- (1) The system of accounts is approved by the Provincial Agricultural Society.
- (2) The accounts comprise all sections of the agricultural industry.
- (3) The results are checked and published each year for the benefit of the public.

Until 1917 the results of the investigations were as a rule published separately by each individual local society, but in 1916 on the initiative of the Royal Agricultural Society of Denmark, a special committee was formed with the object of establishing a uniform system of keeping and compiling these accounts, and in 1918 an Office for Agricultural Economics was set up at the headquarters of this committee. The number of completed farm accounts and balance sheets that have been analysed in this office during the 3 years that have elapsed since its establishment is :—

1916-17	...	75.
1917-18	...	235.
1918-19	...	312.

The following table shows the returns of the 235 farms whose accounts were analysed for the year 1917-18, tabulated according to the size of the holdings :—

	Below 25 Acres	25 to 50 Acres	50 to 75 Acres	75 to 125 Acres	125 to 250 Acres	Over 250 Acres	Mean
No. of Farms	14	42	68	70	29	12	
Average size, acres	17.0	37.7	63.2	95.0	168.5	467.7	99.5
	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Capital per acre	53 16	54 8	56 17	53 13	48 18	47 6	53 9
Gross Profit per acre	16 18	16 15	16 10	15 12	14 5	14 0	15 18
Expenses, including farmer's labour, taxes, &c.	13 10	11 11	11 7	10 8	9 15	9 14	10 19
Net Profit per acre	3 8	5 4	5 3	5 4	4 10	4 6	4 19
Interest on Capital per cent.	6.4	9.6	9.1	9.8	9.3	9.1	9.2

The above figures show that in the year 1917-18 the smallest farms averaging 17 acres each grew crops worth the most money per acre, but that the expenses were excessively high, so that these small farms made less net profit per acre than the larger-sized farms. The most profitable farms were those between 25 and 125 acres. The interest on the capital invested averaged about 9 per cent., varying but little according to the size of the various farms except the very small farms of less than 25 acres,

where the net profit was only 6½ per cent. on the capital invested.

CORRESPONDING FIGURES FOR THE YEAR 1918-19 ARE AS FOLLOWS:—

	Below 25 Acres	25 to 50 Acres	50 to 75 Acres	75 to 125 Acres	125 to 250 Acres	Over 250 Acres
No. of Farms . . . . .	24	51	78	95	38	19
Average size, acres . . . . .	16·3	39·3	61·2	94·8	163·3	501·0
Capital per acre . . . . .	£ 61 12	£ 55 4	£ 56 11	£ 50 16	£ 50 4	£ 45 4
Gross Profit per acre . . . . .	25 4	20 7	19 12	17 18	16 16	15 16
Expenses, including farmer's labour, taxes, &c. . . . .	18 7	13 1	12 12	11 5	10 11	9 11
Net Profit per acre . . . . .	6 17	7 6	7 0	6 13	6 5	6 5
Interest on Capital per acre . . . . .	11 1	13 2	12 4	13 0	12 5	13 8

The Capital per acre includes the taxable value of the land and farm buildings (about 35 per cent. below the market values) and the value of the livestock (about 30 per cent. below their market value) and dead stock (actual cost price less depreciation, about 60 per cent. below to-day's market value). On the whole the Capital is about 36 per cent. below sale value. The Gross Profits represent sales, the value of milk, &c., consumed in the farm-house, and also the increase in the valuation at the end of the year. Expenses include the farmer's own labour and his family's on the same scale as hired labour plus an allowance for managing the farm. The calculations have been based on the pre-war rate of exchange, i.e., 18 kroners to the pound sterling; the present rate of exchange is 25 kroners to the pound.

For the year 1919-20 the figures for about 400 farms are expected to be available. The Office for Agricultural Economics is staffed by a director, an assistant director and three other assistants. The Government subsidy last year was £1,100.

#### (4) *Agricultural Education Exhibits at Shows.*

Another feature of the educational work of these societies is the educational exhibit at many of their Local and all their Provincial Agricultural Shows. There are three kinds of agricultural shows in Denmark:—

- (1) The Local Agricultural Societies' Shows. For all kinds of animals.
- (2) The Provincial Agricultural Societies' Shows. For young stock under 3 years of age.
- (3) The State Agricultural Shows. For bulls over 3 years of age and stallions over 4 years of age.

There are a large number of local shows but only one provincial show in each province. The writer visited two of these summer shows, the Jutland Provincial Show at Kolding and the Seeland Provincial Show at Naestved, and he was much impressed by the exhibits in the agricultural education tent.

At the Seeland Show there was a large wooden shed, 38 yards by 11 yards, devoted entirely to the educational exhibits. Including other exhibits were growing plants of different varieties of wheat, barley, oats, rye, mangels, swedes, turnips and carrots, with samples of their seed and the yields obtained in previous years' field trials, tables showing the results of trials with various strains of mangels submitted by different seedsmen (*see* page 85), growing specimens of different kinds of grasses and their seeds, the results of trials with different strains of white clover, alsike clover, kidney vetch and yellow trefoil, the results of trials with seed of early red clover obtained from different countries, the results of numerous potato-spraying experiments, the effect of different-sized dressings of lime on finger-and-toe in swedes, maps showing the distribution of various cultivated crops throughout the province and the average yields during the past five seasons, growing specimens of weeds indicating sour or wet land, specimens of tools used in draining lands, tables showing the effect of draining in yield per acre on the crops grown and a list of places where lime could be purchased and at what price. Outside the tent was a piece of land laid out for draining, with the pipes laid and the connections made. The



FIG. 4.—Demonstration Plots, Jutland Provincial Show.

whole exhibit was in the charge of a number of demonstrators, who were busily occupied throughout each day of the show in explaining the exhibits to the large number of people who thronged the tent.

An equally large tent 30 yards by 13 yards was utilised for the educational exhibit at the Jutland Show and the exhibits were of a similar nature. Large cardboard models of roots of different sizes were used for showing the effect of different manures on the root crop and a conspicuous feature of the exhibit was a series of tables showing the result of agricultural costings on ten different farms in Jutland. Behind the tent was a piece of land, nearly 2 acres in extent, laid out in little plots, 5 yards by 4 yards, each demonstrating a different variety of wheat, barley, oats, rye, pea, mangel, swede, potato or clover or the effect of different manures or different soil cultivation. There were between 500 and 600 of these plots, all carefully labelled, which had been laid out during the previous 12 months specially for this occasion. They were visited by large numbers of farmers and here again a number of demonstrators, experts employed by the Society, were available, constantly giving addresses bearing on the different plots.

The writer did not have the opportunity of visiting any of the numerous local shows or of the fourteen State shows, but he was informed that similar exhibitions, on a larger or smaller scale, are set up in connection with many of the local shows though not at the State shows.

One other feature of the agricultural shows is the importance attached to the value of milk records. The judges will not award a prize to any bull which cannot show the milk records of its mother, and they are influenced by the milk records in making their awards. Similarly no cow may be exhibited unless she belongs to a milk-recording society, and all the milk records, with the fat percentages, are printed in the show catalogue. At the provincial shows there are classes for family groups of cattle, the progeny of one cow or the progeny of one bull, and these classes are better filled than the classes for individual cows. Here again the milk records have to be stated, and the judges, in awarding the prizes, consider the record of each cow and the uniformity of the group, as well as their individual appearance. There are also classes for herd groups, the number of cattle to be shown varying with the size of the owner's herd. Milk-recording has become very popular in Denmark, and one cow in every six now belongs to an officially recognised milk-recording society, where the milk of each cow is weighed and analysed once every two or three weeks by a milk recorder. In many cases the weighing of the food is also included in the milk recorder's duties. The effect of the milk-recording societies in gradually

raising the average milk yield of the cows in Denmark is shown by the following figures :—

Year	No. of Herds Milk recorded	No. of Cows Milk recorded	Yield of Milk per Cow per annum	Percentage of Fat
1905-06 . . .	8,463	139,644	663	3.45
1908-09 . . .	9,372	163,275	672	3.50
1911-12 . . .	10,071	167,723	692	3.51
1914-15 . . .	12,823	200,064	693	3.54
1915-16 . . .	14,306	209,027	713	3.60
1917-18 . . .	14,417	193,688*	522*	3.60

\* Reduction owing to the impossibility of getting concentrated feeding stuffs.

(5) *Premiums for the Best Cultivated Farms.*

The Local Agricultural Societies often offer premiums for the best cultivated farms or small holdings and organise visits for their members, under expert guidance, to different places.

(6) *Encouragement of Various Associations for Special Purposes.*

There are numerous associations in Denmark formed for special purposes. A number of them have already been enumerated on page 89, and others are Pig Breeding Associations, Goat Breeding Associations, Tuberculin Societies, Cattle Export Societies, Co-operative Sale Societies for Livestock, Co-operative Potato Flour Societies, Co-operative Sugar Factories, Co-operative Marling Societies, Seed Cultivation Societies, Chicory Cultivation Societies, Plantation Societies, Fire Insurance Societies, Insurance against Accident Societies, Credit Societies, Horticultural Societies, Fruit Cultivation Societies, Co-operative Fruit Sale Societies, Bee-keepers' Associations, &c.

THE WORK OF THE DANISH HEATH SOCIETY.

Some reference must be made to the work of the Danish Heath Society, which was originally started as a private society for purchasing barren heath land in Jutland and promoting its cultivation by the construction of roads, irrigation canals and light railways, by bringing and ploughing in marl, by cultivating the best of the land and planting up the remainder as woodland. This society is now in receipt of considerable State support, in return for which it raises and distributes every year at reduced rates between ten and twelve million plants for hedges, gardens and small plantations, it arranges the transport of marl for those who require it (in 1914 alone 650,000 cubic yards of marl were carried on these marl railways), it has established two large permanent experimental stations to demonstrate

methods of cultivating marsh land, and it gives written advice to all who apply for it. A very interesting day was spent with the director of this Society in visiting land reclaimed from heath. It was evident, however, that much of the reclamation work that has been carried out is not an economic proposition, but that the State is spending large sums of money, and even using convict labour, for reclaiming derelict land in order that it may carry a larger population.

#### THE WORK OF THE ROYAL AGRICULTURAL SOCIETY OF DENMARK.

Some account must also be given of the work of the Royal Agricultural Society of Denmark. This Society was established in 1769 and has 11,000 members, consisting mainly of large landowners, agricultural experts, directors of co-operative societies, business men, &c. The ordinary farmer does not as a rule belong to this society. The work of this society includes :—

- (1) The practical education of young men on farms.
- (2) The extended (practical) education of dairymen.
- (3) The distribution of medals and money prizes to farmers and agricultural labourers who have distinguished themselves.
- (4) The administration, on behalf of the State, of the work of certain State Commissioners.
- (5) The carrying out of subsidised implement and machinery tests.
- (6) A bureau for agricultural excursions.

The activities of the Royal Agricultural Society of Denmark cover all branches of agriculture, and the Society is frequently employed by the State as an advisory board.

#### (1) *Agricultural Apprenticeships.*

Nearly 100 years ago the Royal Agricultural Society of Denmark organised an apprenticeship scheme for teaching lads practical farming. Up to 1913 about 2,400 young men had been trained in this way. The scheme now in existence may be considered under three headings :—

- (a) Training on large farms.
- (b) Training on small farms.
- (c) Training in the management of livestock.

The training on large farms is extended over 3 years, each year being spent on a different farm in order that the student may gain a large and varied experience. The instruction is essentially practical, but the Society also encourages theoretical



learning by sending to each student a certain number of scientific books, which he is allowed to keep after he has finally and successfully passed his examinations. He has to submit to the Society every year a diary showing how his time has been spent, and he is visited occasionally on the farm by representatives of the Society. In order to obtain one of these apprenticeships a candidate must be at least 17 years of age. During his apprenticeship he receives an allowance of £8 to £12 a year in addition to his board and lodging.

The course on small farms extends over 2 years instead of 3 years, and in addition to his board and lodging the apprentice receives an allowance of about £9 in his first year and £11 in his second year.

The course in stock management lasts for 3 years, and is spent on two farms. The farmer boards and lodges the pupil, and pays him £9 for the first year, £10 for the second year, and £12 for the third year. The apprentice must do all the work he is ordered to do, learn to milk, to understand feeding, to clean and take charge of the animals, to kill pigs and perform similar tasks.

#### *(2) Dairying Apprentices.*

There is a similar scheme for the training of dairymen. In 1919-20 a sum of £1,250 received from the State was divided among 100 persons desirous of learning dairying or improving their knowledge by means of bursaries, enabling them to study in selected dairies inspected by the Society, or to make short educational tours. The Society has to satisfy itself that applicants are likely to benefit from the facilities to study that are granted them before approving of their application.

#### *(3) Rewards for Good Service.*

The Society awards silver cups to farmers who have specially distinguished themselves by converting derelict land into land capable of producing good crops. It also gives prizes to labourers who have shown particular skill in certain classes of work or who have served their masters for a long term of years.

#### *(4) The Administration of the Work of Certain Technical Advisers.*

Normally the State has no direct relationship with their Agricultural Advisers although the latter are State officials. The State deals with them only through the medium of the Royal Agricultural Society, and the Technical Advisers send to

the Society every year a report of their activities. The following is a list of the State Agricultural Advisers that exist at the present time :—

- One in Agricultural Chemistry.
- Two „ Plant Culture.
- Four „ Animal Husbandry.
- Four „ Dairying.
- Two „ Agricultural Machinery.
- One „ Horticulture.
- One „ Plant Diseases.
- One „ Agricultural and Forestry Zoology.

The Adviser in Plant Diseases was the only one that the writer was able to meet. He has his headquarters at the Lyngby State Experiment Station, where he is provided with some land on which he can carry out experiments. He travels throughout the country giving advice wherever required, and in the winter time his services are available two or three days a week for lectures to farmers' meetings, on payment of a fee of about £1, plus his travelling expenses.

#### *(5) Implements and Machinery Tests.*

From 1872 to 1892 it was the practice to hold comparative trials of certain classes of agricultural implements in connection with large farmers' meetings, but as these gatherings were held several years apart, and there was a growing interest in agricultural machinery, the State in 1892 set aside a small sum of money to be expended year by year in the testing of agricultural machinery. These State-subsidised tests are administered by the Royal Agricultural Society, through a special committee, and the money available has as a rule been apportioned so that the greater part of it is spent on the larger competitive tests, whilst a portion of it is placed at the disposal of the State Adviser in Agricultural Machinery to use for single tests as a preparation for, and in connection with, the larger competitive tests. The results of the tests are published in book and pamphlet form. Most of the implements used in agriculture have been included in the tests at one time or another, whilst some of the most commonly used implements of husbandry have been tested on several occasions during recent years as improved forms have been put on the market.

#### *(6) Agricultural Excursions.*

Excursions to model farms, creameries, &c., are organised by the Royal Agricultural Society. In 1919-20 a sum of nearly £10,000 was expended in prizes for small-holders and travelling

expenses incurred in visiting various places. The writer has been informed, since returning home, that the State subsidises even to the extent of compensating the small farmers for loss of time due to being absent from their farms while studying farming elsewhere.

*The Central Agricultural Board.*

In 1919 a Central Agricultural Board, called the Landbrugsraadet, consisting of two representatives of the Royal Agricultural Society of Denmark, five representatives of the Associated Agricultural Societies, and five representatives of the Central Co-operative Committee of Denmark was formed, to which it is expected shortly to add five representatives of the Associated Small-holders Societies. The objects of this Central Committee, representing all the chief agricultural organisations in Denmark, are :—

- (1) To promote co-operation between the technical and economic branches of the various agricultural societies.
- (2) To advise the State on questions concerning agriculture, and to submit proposals that in the opinion of the Central Committee will be beneficial to agriculture in general.
- (3) To keep in touch with agricultural experts in other countries, and
- (4) To fight against anti-social trusts and monopolies.

This Central Committee, which is a private body, has only been set up quite recently, so that it is not yet possible to judge of its work.

CONCLUSION.

Comparing agricultural education in Denmark with that in England the leading distinction is that in Denmark students are required to gain practical experience of farm work before they come to the school and a farm attached to the school is considered unnecessary. It has always been a vexed question in this country whether agricultural students should go straight from school to an agricultural college or should first put in a year or more on a farm. There are strong arguments on both sides, but for the concentrated farm institute courses the case in favour of the students having first to obtain practical experience on a farm seems indisputable, and educationists may well ask themselves whether, apart from its value to the farmers of the county for field demonstration purposes, a farm attached to the Farm Institute, which is frequently occupied by male

students only during the winter months, is really necessary. The writer has always maintained that the County Farm Institute, with its very limited residential accommodation and heavy maintenance expenses, is too expensive an institution for giving instruction in manual operations which can be learnt satisfactorily on many farms in every county, and that it should be a place where the peripatetic scientific staff of the County Council can give a condensed but systematic course of scientific instruction, such as cannot be given elsewhere, to students who already know the practical side of farming, with the idea of developing their powers of observation, explaining the "reasons why" of the things they have already learnt, giving them a comprehensive understanding of the principles underlying soil cultivation and manuring and the feeding of livestock, and creating a thirst for further knowledge and an interest in scientific literature.

A farm attached to the Farm Institute is useful for many purposes, but if a County Council cannot see its way to secure a farm there seems no reason why the whole scheme of a Farm Institute should be held up; in the writer's opinion the provision of lecture rooms and laboratories is more important than land.

The impression left on the writer when he quitted Denmark was one of progress. The Folks' High Schools are overflowing, the Agricultural Schools are lengthening their courses; the Royal Agricultural College is enlarging its buildings; plant-breeding and selection is improving the yield of wheat and mangels year by year; the effect of milk recording is gradually raising the milking capacity of the cows; the annual export of eggs has risen from 145 million to 1,120 millions in 20 years. Everywhere there is a forward movement. Barley, oats and potatoes are now about to receive the attention of the State Experiment Stations with a view to raising their cropping capacity. The State Experiment Stations do the pioneer work, the demonstration plots under the direct control of the agricultural societies bring the results to the notice of the farmers. The writer can still hear the advice of the Director of the Agricultural Experiment Laboratory ringing in his ears: "Keep always close to the farmer," and that seems to be at least one of the secrets of success of this forward movement in Denmark. In England the wheat crop has averaged 32 bushels per acre for many years. How much longer are we going to be satisfied to stand still? The English farmer has a very different temperament from that of the Dane and he has different conditions to contend with. He is not fond of education; he does not like reading, but his attitude towards the scientific man and the results of scientific experiments has altered perceptibly during recent years. If farmers' clubs and branches of the National Farmers' Union could be given a direct interest in field demonstration

plots by encouraging them to organise this work themselves, in the writer's opinion a great step forward would follow. Co-operative methods and the fostering of agriculture, the sole industry of the country, by the State Government are of course other contributing factors to the prosperity of agriculture in Denmark.

Before concluding the writer desires to record his very best thanks to the following gentlemen who have most kindly and liberally, often at much trouble to themselves, supplied him with the information contained in this article and in some cases have read through and corrected the proofs:—Messrs. C. F. A. H. Graae and F. Hasserees (Elementary Schools and Folks' High Schools), Jakob E. Lange (Smallholders' Schools), Th. A. Jensen (Agricultural Schools), H. O. G. Ellinger (the Agricultural and Veterinary College, Copenhagen), E. Lindhard (The State Experiment Stations), L. Frederiksen (Agricultural Associations), O. Larsen (Agricultural Costings), Dr. Vincent Naser (Chairman of the International Students Bureau which organised our visit), and H. Lund, an old student of the Royal Agricultural College, Copenhagen, who acted as interpreter to our party throughout our journeys. Wherever we went in Denmark we received a warm welcome, and we owe a great debt of gratitude to the gentlemen mentioned above, and to many others too numerous to name, for their kindness and assistance in giving us the information we required and in making our visit a pleasant and profitable one.

G. H. GARRAD.

Sessions House,  
Maidstone.

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## THE INDUSTRIAL UTILISATION OF THE POTATO.

### I.

THE principal use of the potato in this country has always been for human food. Together with milk it enjoys the distinction of being the only important article of diet in which this country is self-sufficing, for although there is a considerable importation of "new" potatoes from some parts of the Continent of Europe and certain other places, the supplies are relatively unimportant, and the great bulk of the population are dependent on the home-grown article. In glut years there has ever been a certain export trade.

Prior to the war potatoes were not used for any purpose in England other than that of supplying the table and of providing a certain amount of feeding stuffs for farm livestock, although some years since there were a few very small factories existing in the North for the purpose of making potato starch.

Certain other countries have, however, developed large industries for the utilisation of the potato for a variety of purposes other than that of direct consumption in its natural form as food, and the Continental farmer in many places has found it a remunerative crop to grow solely for industrial purposes. In Holland the statistics show that in the five years prior to the war about one and a quarter million tons of potatoes were employed annually in factories producing farina (potato starch). In Germany the average production of potatoes in the same period was about fifty-three million tons per annum, the bulk of which went into factories engaged in the production of farina, potato flour, alcohol for industrial and other purposes, syrups of various kinds, and a variety of other products. The German production contrasts with a total yield in Great Britain of about two and a half million tons per annum over the same period, or 11 tons per 100 acres of agricultural land in this country compared with 55 tons per 100 acres in Germany. It has indeed been asserted that Germany could not have made war had it not been for the huge reserve of food material, both for human consumption and for farm livestock, represented by her potato production for industrial use in times of peace.

Although there have been a few small attempts, as stated above, to establish potato manufactures in this country, it was the war which was the means of really focussing attention

upon the subject. In the first place, there was a shortage of wheaten flour for bread-making, and potatoes were proposed for use in the bakehouse as a partial substitute. The utilisation of the whole potato for this purpose, however, was not a success, for the baker was not equipped to use raw potatoes, and it was found also that deterioration of the tubers set in rapidly in the bakehouse store, so that this experiment was quickly stopped. It was then proposed to turn the potatoes into a flour in factories erected in the districts of potato production, so as to give the baker material in a form to which he was accustomed, and to save the cost of transporting the tubers with all their natural moisture.

A shortage of potato products was being experienced at the same time in other ways. Potato starch, or farina as it is called, is a necessary article in the textile trades, where it is used for dressing and finishing cotton cloth, and as this material had been manufactured only on the Continent, in Holland or Germany, the war had stopped supplies. The country's requirements in the shape of farina for textile purposes were such as to utilise the product from about 400,000 tons of potatoes annually. These facts led to the erection of some large factories on the East Coast in potato growing districts for the purpose of making farina and cattle foods from the potatoes.

There was also a shortage of starch at the cordite factories, starch being one of the necessary raw materials for making cordite, and the factories concerned had to resort to the use of maize, rice, &c., which were useful foodstuffs, and it was hoped that these farina factories would provide the cordite works with the starch they required, whilst the Government and the manufacturers concerned had also in view the capturing of a trade, namely, farina manufacture, which was up to then almost wholly German.

## II.

The first industrial use to be considered is the preservation of potatoes by simple drying processes. A number of factories exist on the Continent, and experimental stations were erected in England during the war for the purpose of extracting by heat the bulk of the moisture, which, as is well known, is about 75 per cent. of the total weight, in order to preserve the potato for future use.

An important matter is the prevention of discoloration during the process. If proper care is used in designing the drying plant a good colour of product can be maintained without the use of any preserving agent, otherwise discoloration

ensues, due to the action of enzymes. The potatoes to be preserved are first washed, then generally sliced or cut into chips, and dried in these forms. By this method the starch remains in an unchanged form, and the dried potatoes can be used later for any further industrial process in which unchanged starch is necessary; or the dried potatoes can be used for feeding purposes as and when required. The dried product contains all the solid materials of the potatoes *plus* only about one-twentieth of the original moisture. The result is that the finished article is about one-quarter of the original weight of potatoes received by the factory.

A process somewhat similar to the above is also in use in preparing dried pressed potatoes. The advantage of this system is that some of the water of the potato is got rid of by mechanical means instead of by heat only as in the foregoing method. In this process the potatoes are washed, then finely ground until they form a thin mash, after which they are pressed into cakes, and the extracted water, which consists of the juice of the potatoes, is utilised either for manurial purposes or for the concentration of its contents. The pressed cake is then dried by heat, and it is found that only one-third of the drying is necessary compared with that required in preparing the dried flakes and chips above mentioned. The dried, pressed potato, when properly balanced with concentrates, forms an excellent foodstuff.

Among other methods of drying potatoes which may be mentioned is that of shredding. In this process the potatoes are washed and peeled and then parboiled; the parboiled mash is then forced through perforated die-plates and the strings thus formed are spread upon trays and dried by heat.

A more elaborate process in the industrial utilisation of the potato is its conversion into "potato flour," as it is called in this country. In this process the potato is first cooked, then dried, then reduced to flour, when it takes the form of a creamy powder. The potatoes are first conveyed through a stoning machine, in which stones accidentally introduced from the field are taken out; the potatoes are then washed thoroughly and cooked by steam in an enclosed container; the potato-mash thus formed passes on to a flaking machine, which generally consists of a pair of hollow rollers about 4 ft. diameter heated internally by steam; the mash passes between these rollers and adheres to the surface of the same in a thin film, which in the course of a partial revolution of the rollers is thoroughly dried and scraped off automatically in the form of flakes. These flakes pass on to flake breakers, where they are reduced to flour. In this process the starch becomes dextrinised during the cooking, and the product cannot, therefore, be



used in any process where unchanged starch is necessary, but there remains a large field for the commercial utilisation of this material. It is used in large quantities in proprietary foodstuffs, in breadmaking, in soup powders, in fermentation processes, and it has been supplied to our own and other War Departments as ready-cooked potatoes, which by the addition simply of the necessary quantity of hot water gives mashed potatoes.

In the manufacture of potato flour the skins may be either included or eliminated as desired; in the latter event the operation is done automatically in revolving vessels, with roughened inner surfaces, through which a stream of water passes to carry off the skin particles rubbed off. About four to five tons of potatoes are necessary to produce one ton of potato flour.

Perhaps the most extensive commercial use of potatoes, however, is for the manufacture of farina. This product is a very fine, white, glistening powder which consists mainly of starch in an unchanged form, and it is used in breadmaking and in various food preparations, such as custard powders, &c. It is also used very largely in the textile industries, mainly in connection with the cotton and jute manufactures, where it is necessary in the weaving, finishing, and weighting processes, as also in dyeing processes. It is also employed as the first stage in the manufacture of dextrines, which in their turn again are used in textile industries, in the manufacture of gum, and in the laundry industry. Besides other uses in this form too numerous to mention, it is an ingredient in the manufacture of propulsive explosives and the basis of various fermentation industries.

The processes involved consist again in this case of stoning and washing, which must be very thorough because of the great importance of securing high colour standard in the finished material. This is followed by milling machines, where the potatoes are reduced to such a fine state of mash by means of fine saws quickly revolving that the starch granules are freed from the cells which contain them. Following this operation is the first of the sifting processes which extract the cellular material, thus liberating the bulk of the starch that was in the potatoes in a free but unpurified state. The starch at this stage is of a very dirty colour; washing and purification processes then follow in which large volumes of clean water are used, by which the dirty starch is converted into spotless white material without any artificial bleaching agents. This material is then dried at low temperature to obviate the conversion of the starch to dextrine. It afterwards follows a process of manufacture similar to that used in flour mills, where

it is ground, if necessary, and then finely dressed, and thus becomes the *farina* of commerce.

The residues of the above processes consist of the skins and internal cellular structures of the potatoes, which are dried in various ways to form cattle foods, or they are sometimes utilised in the wet state as the basis of fermentation processes.

The two dry products together—about equal quantities of each—represent all the dry materials contained in the potatoes, *plus* about one-fifteenth of the original moisture contained in the potatoes, the final result being that the finished dry products will weigh between one-fifth and one-quarter of the original weight of the potatoes received by the factory.

Another most important industrial product from potatoes, though one that has not yet been established in this country, is alcohol. As is well-known, alcohol can be made by fermentation from starch of one sort or another, and the potato forms an excellent raw material for such manufacture.

This has been made use of to a very large extent on the Continent, where alcohol is produced by small plants in the places where potatoes are grown, for the purposes of providing power and lighting. There are also a number of large distilleries where commercial alcohol is produced for various purposes.

As a rough guide to the amount of spirit that can be produced from potatoes, it may be reckoned that one ton of potatoes containing 16 to 17 per cent. of starch will produce twenty gallons of 95 per cent. alcohol. The present value of this alcohol for chemical uses, at 8s. per gallon, would be £8.

The costs of production of alcohol in a small factory working intermittently have been estimated to be about 2s. 6d. per gallon for all charges, and 1s. for distribution, which would leave £4 10s. to pay for the one ton of potatoes and to cover profit.

It is, however, very important to realise that this high price for alcohol will not be maintained if it is manufactured to compete with petrol for power purposes. Larger factories working continuously and more cheaply than the above example will be necessary. It is estimated that a larger plant could work for 1s. 3d. for all charges and 1s. for distribution, which would, with alcohol selling at to-day's petrol price of 4s. per gallon, leave £1 15s. to pay for one ton of potatoes and to cover profit.

In this manufacture as well as in some of the foregoing, it is the amount of starch in the potatoes that counts with the manufacturer, and nothing else, and his output of alcohol by weight would be between 40-45 per cent. of the weight of starch in the potatoes he uses.

The present uses of industrial alcohol in this country are in the production of pharmaceutical products, artificial silks, dyes, photographic films, varnishes, polishes, &c.

Opinion to-day seems to be unanimous that the way out of our present difficulties with regard to petrol supply will be by encouraging the manufacture of alcohol for use either pure, as a substitute, or mixed with benzol, ether and (or) petrol for power purposes. The possible competition that would have to be faced by a potato spirit manufacturer must of course be looked at. So far as England is concerned the only serious competition would be from the conversion of ethylene (contained in coke-oven gases) into alcohol, but if all the coke-ovens that we have were arranged for the manufacture of alcohol from ethylene the total product would only be a very small portion of our requirements of power spirit. Competition will no doubt eventually arise from power alcohol produced in the Colonies and India, but this will to a large extent be discounted by the cost and difficulty of transportation. It cannot be denied that the cost for raw material, in the form of potatoes, which the industry will bear is very low, but the advantage to a British agriculturist, or to a group of agriculturists running their own spirit factory in a neighbourhood where potatoes are grown, is that they will be able to utilise, firstly potatoes that are unfit for sale purposes; and, secondly, in a time of glut they would be able to convert surplus potatoes into alcohol, leaving only sufficient to meet market requirements for sale in the ordinary way.

Briefly, the ordinary process for making potato alcohol is that the potatoes are thoroughly washed, as in other processes, then steam cooked, afterwards saccharified with green malt to form the mash, then fermented with yeast and then distilled.

Further products of the potato which are largely manufactured in various parts of the Continent are glucose and dextrine. Glucose is used in the manufacture of jam, confectionery and preserves, also in the distilling, brewing, textile industries, and other manufactures. The "heavy syrup" in which many tinned and bottled fruits are put up is entirely glucose.

Dextrine is mainly used in the textile industries in dressing and finishing fabrics, and also exclusively in the stationery industry for envelope gumming, &c.

As a matter of fact, glucose and dextrine plants are mostly run in connection with potato starch factories, and such starch as is not required for sale, or is of inferior value, is sent on to the glucose or dextrine factory.

The product that can be obtained from potatoes is, roughly speaking, a weight of glucose or dextrine equal to the weight

of the starch in the potatoes. In other words, one ton of glucose or dextrine could be obtained from eight to nine tons of potatoes.

Glucose is a sweet, clear liquid, produced by the action of steam and acid on starch.

Dextrine is a dry, sweet, gummy powder, varying in colour from white to yellow and is produced by the action of heat and hydrochloric (or other) acid upon prepared dry starch.

While there are several other industrial products, among which may be mentioned products competing with celluloid and bone articles, edible paper for pastry making, &c., their utilisation is so small as to be negligible.

### III.

In choosing the potato for factory use the point of view of the manufacturer would have to be kept in mind. The quality of the potato and its appearance is of no value to the industrial user; what he is after is starch, and other things being equal he will choose a potato which gives him the greatest starch yield, or, judging from another point of view, he would choose a potato which has the greatest density and the least moisture. This is not always the best table variety, but there is a fairly wide range of varieties open to the farmer which would satisfy the manufacturer, and an interesting table was issued recently by the Irish Board of Agriculture, giving the result of tests upon starch content of a large number of varieties. The variations between different varieties are remarkable, ranging from 20·5 per cent. starch, in the case of Langworthy, down to 13·3 in Ninetyfold, and even lower in the case of some little-grown varieties.<sup>1</sup> Two favourite varieties with industrial users in Holland are President and Eigenheimer, while in Germany the favourite variety for the same purpose is Professor Maerker, and in France Richter's Imperator and L'Institut de Beauvais.

### IV.

Considering the future for the industrial utilisation of the potato from the agricultural point of view, one is led to the conclusion that even with the present extent of the crop and the present utilisation of it mainly for the table, the provision of factories for the purpose of converting potatoes is a subject well worthy of investigation. In the event of a glut, the sur-

<sup>1</sup> See Johnson & Boyle, *Industrial and Nutritive Value of the Potato in Ireland*. (*Journal of the Dept. of Agriculture, &c., for Ireland*, vol. xviii., No. 4, 1918.)

plus need not be thrown upon the market for table consumption as is usually necessary, with the consequence that prices fall rapidly and the crop becomes unremunerative. Presuming that the surplus beyond table needs could be sent to the factory its withdrawal from the open market would have a steadying effect, and remunerative prices for such potatoes as were placed upon the open market would be maintained.

But apart from the question of surplus the existence of these factories would have the effect of providing always a market for diseased potatoes, for it is the curious fact that although a potato may be totally unfit for human consumption by reason of the disease its starch content is generally unaffected, and quite sound commercial products can be obtained from it. The factories would also provide a market for chits and heads which may not otherwise be utilisable.

This short article is intended mainly to be suggestive, by pointing out to the British agriculturist what alternative uses exist in connection with the potato crop. Probably the highest prices will always be secured, taking one year with another, for that portion of the crop which can be marketed directly as human food, but production varies considerably, both as to acreage and as to yield, and a sure outlet for the surplus in years of plenty would exert a stabilising effect upon the principal market. Moreover, a potato manufacturing industry could not be centralised; the cost of transporting a product containing so high a percentage of water would necessitate the erection of several factories throughout the potato-growing areas which would react most beneficially upon the whole rural organisation by the provision of winter employment for a considerable number of workers. The further advantages of establishing new industries for the provision of employment at home, and for the conservation of national wealth, are in the minds of every one at the present critical time, and need not be argued here.

A. E. HARRIS.

71 Finsbury Pavement,  
London, E.C.2.

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## CONTEMPORARY AGRICULTURAL LAW.

## I.—LEGISLATION.

With the exception of the very important Agriculture Act 1920, which was passed into law at the very close of the Parliamentary Session of 1920, there has not been a large amount of legislation in the year affecting agricultural interests. There are however certain measures to which attention may usefully be drawn.

The previous legislation restricting the increase of rent and the right to possession of small houses was repealed and to some extent re-enacted and amended by the Increase of Rent and Mortgage Interest (Restrictions) Act 1920 (10 & 11 Geo. 5, c. 17). It is to this Act therefore that it will be necessary to have recourse when a question arises as to the right to require an increase of rent or delivery of possession of any such house. The Act applies to a house or part of the house let as a separate dwelling, where either the annual amount of the "standard rent" or the rateable value does not exceed (a) £105 in the metropolitan police district, including the city of London, (b) in Scotland, £90, (c) elsewhere £78, but it does not apply to a dwelling house bona fide let at a rent which includes payments in respect of board, attendance, or use of furniture. It is to continue in force until June 24, 1923. By section 2 certain increases of rent are permitted to cover expenditure on improvements, increase of rates, cost of repairs and also an additional amount not exceeding 15 per cent. of the net rent, but otherwise the rent cannot be raised. By section 5 the right to recover possession is restricted except in certain cases which include cases where rent is in arrear, or the tenant has been guilty of conduct which is a nuisance or annoyance to adjoining occupiers, or has allowed the premises to be used for immoral or illegal purposes, or the dwelling-house is reasonably required by the landlord for occupation as a residence for himself or for any person bona fide residing or to reside with him or for some person in his whole time employment or in the whole time employment of a tenant from him and (except as otherwise provided) the court is satisfied that "alternative accommodation, reasonably equivalent as regards rent and suitability in all respects" is available. But "alternative accommodation" need not be shown where the tenant was in the employment of the landlord or a former landlord and the dwelling-house was let to him in consequence of that employment and he has ceased to be in that employment, and when the court is satisfied by a certificate of the County Agricultural Committee (or of the Minister of Agri-

culture and Fisheries pending the formation of such committee) that the dwelling is required by the landlord for the occupation of a person engaged on work necessary for the proper working of an agricultural holding. So that where a farmer requires the possession of a cottage let with the farm for the use of a man in his employ, he should first apply for and obtain such a certificate.

The Act does not apply to any dwelling-house erected after, or in course of erection on, April 2, 1919, or to a house let with land other than the site of the house, unless the rateable value of the land let separately would be less than one quarter of the rateable value of the house.

The Finance Act 1920 (10 & 11 Geo. 5, c. 18), by Section 57 repeals the land values duties (*i.e.*, increment value duty, reversion duty and undeveloped land duty) imposed by the Finance (1909-10) Act 1910, and the obligations of the Commissioners of Inland Revenue under that Act to cause a valuation to be made of all land in the United Kingdom. Any person showing that he or any person of whom he is the legal representative has paid any sum on account of any land value may obtain repayment of the same. The only other part of this Act which it appears necessary to notice here is Section 13 which imposes certain duties on licences for mechanically propelled vehicles as mentioned in the second schedule to the Act. The second schedule prescribes the duties to be payable on vehicles used solely in the course of trade or agriculture which include a duty of 5s. only on "locomotive ploughing engines, tractors, agricultural tractors, and other agricultural engines, not being engines or tractors used for hauling on roads any objects except their own necessary gear, threshing appliances, farming implements, or supplies of fuel or water required for the purpose of the vehicle or for agricultural purposes." On "road locomotives and agricultural engines, other than such engines in respect of which a duty of 5s. is chargeable or which are used for haulage solely in connection with agriculture" the duty is £25 if not exceeding 8 tons in weight unladen, £28 if exceeding 8 tons but not exceeding 12 tons in weight unladen, and £30 if exceeding 12 tons. For tractors and agricultural engines, other than such tractors or engines in respect of which a duty of 5s. is chargeable, used for haulage solely in connection with agriculture the duty is £6 if not exceeding 5 tons in weight unladen, and £10 if exceeding 5 tons in weight unladen.

The Ecclesiastical Tithe Rent Charge (Rates) Act 1920 (10 & 11 Geo. 5, c. 22) relieves the owners of tithe rent charges attached to an ecclesiastical corporation or benefice of rates in excess of the amount which would have been payable if the rate had been made at the amount in the pound equal to the amount in the pound at which the corresponding rate was made in 1918.

Further, if the owner of such a tithe rent charge shows by statutory declaration that the total income arising from the benefice does not exceed £300 he is relieved altogether from the rate. If it exceeds that sum, but does not exceed £500, he will be allowed an abatement of one half. This Act though relieving the clergy from a subject of complaint has the unfortunate effect of increasing the burthen of other ratepayers where it applies, as no provision is made for meeting the loss to the rates which it necessarily causes.

The Ministry of Food (Continuance) Act 1920 (10 & 11 Geo. 5, c. 47) continues the office of Food Controller until September 1, 1922 for the purposes of the maintenance and augmentation of the food supply of the country and the regulation in the public interest of the treatment, distribution and prices of food. By Section 3 the Food Controller is given power to regulate the importation and exportation of food, and by Section 4, "with a view to assisting the industry of hop growing in the United Kingdom to recover from the injury which it suffered during the war," he may have and exercise any powers which at the time of the passing of the Act were exercisable by him and may by order prohibit or regulate the importation of foreign hops. By the Schedule to the Act his powers are subject to a limitation that he shall not without the consent in England and Wales of the Minister of Agriculture and Fisheries, in Scotland of the Board of Agriculture for Scotland, and in Ireland of the Department of Agriculture and Technical Instruction, make any order for the purpose of encouraging the cultivation of land in any manner, the keeping or breeding of any livestock or poultry, or the production of any farm or dairy produce.

The Seeds Act 1920 (10 & 11 Geo. 5, c. 54) which comes into operation on August 1, 1921, by Section 1 requires any person who sells any seeds to which the Act applies or any seed potatoes on or before sale or on or before delivery to deliver to the purchaser a statement in writing containing the "prescribed" particulars with respect, in the case of seeds, to their variety, purity, and germination and, in the case of seed potatoes, to their class, variety, size and dressing. and in either case to any other "prescribed" matters. Every person who exposes for sale any seeds to which the Act applies or any seed potatoes must cause to be displayed conspicuously on or in close proximity to the seeds or potatoes a statement in writing containing the required particulars. But the Minister of Agriculture and Fisheries may by licence exempt any person as respects any sale or any exposure for sale of seed or seed potatoes from compliance with the foregoing requirements. Section 2 makes provision as to tests of seeds and Section 3 prohibits the sale or use of seeds containing injurious weed seed.



Section 4 empowers any person duly authorised by the Minister to enter on any premises where seeds or seed potatoes are sold or exposed and to take samples for testing. Under Section 5 the Act will not apply (a) to a sale of seeds to a person with a view to cleaning them before sale, (b) to a sale of seeds where the purchaser at the time of sale gives the seller an undertaking in writing that he will, before selling, test or cause them to be tested, or that he will not resell the seeds to a seed merchant except on a similar undertaking by the purchaser, (c) to a sale for delivery outside the United Kingdom, or (d) to a sale or exposure for sale of seeds or seed potatoes not to be used for sowing or planting. Section 7 empowers the Minister after consultation with representatives of the interests concerned (and as respects forest tree seeds after consultation also with the Forestry Commissioners) to make regulations for carrying the Act into effect and in particular for prescribing (a) the seeds, whether agricultural, vegetable or forest tree, to which the Act is to apply; (b) the manner in which samples are to be taken and dealt with, and (c) any matter which under the Act is to be "prescribed." Any regulation made under the Act must be laid before each House of Parliament, and either House has power to annul the same within thirty days. The Act provides for penalties and the institution of legal proceedings and by Section 13 for the establishment of official seed testing stations.

Undoubtedly the most important Act of the Session from the agricultural point of view is the Agriculture Act 1920 (10 & 11 Geo. 5, c. 76) which was considerably altered in its passage through the House of Lords and was not passed into law until the last day of the Session. To set out fully the effect of the Act it would be necessary to examine it in greater detail and at greater length than is possible here, and it is therefore only proposed to summarise its principal provisions. It is divided into three parts. Part I is an amendment of the Corn Production Act 1917, Part II is an amendment of the Agricultural Holdings Act, and Part III contains some general provisions. To deal first with Part I, it provides that the Corn Production Act 1917 (see summary of this Act in Article on Contemporary Agriculture Law in Vol. 78 of the Journal of R.A.S.E.) which was only passed to continue until the end of the year 1922 shall continue in force until Parliament otherwise determines with power to His Majesty by Order in Council on an Address presented to him by both Houses of Parliament to declare that it shall cease to be in force on the expiration of the fourth year subsequent to the Order in Council. Section 2 amends the provisions of the Act of 1917 as to minimum and average prices of wheat and oats and lays down that the minimum prices for wheat and oats for the year 1921 and any subsequent years shall be such prices for

a statutory quarter as "correspond" to the minimum prices for wheat and oats for the year 1919 ("the standard year") viz., Wheat, 68s. per customary quarter of 504 lb.; Oats, 46s. per customary quarter of 336 lb. The "correspondence" of any year will depend upon the cost of production of the wheat and oats respectively in that year as compared with such cost of production in the standard year and the minimum prices will vary proportionately. The costs of production for the purpose of thus fixing the minimum prices are to be ascertained by Commissioners and the minimum prices are to be certified by them. Farmers will thus be guaranteed minimum prices for wheat and oats varying according to the cost of production in 1921 and each following year while the Act is in force reckoned on the footing of a presumed crop of 4 quarters to the acre on land sown with wheat and 5 quarters to the acre on land sown with oats in accordance with the provisions of Section 1 of the Corn Production Act 1917. The expression "statutory quarter" is to be substituted for the expression "quarter" in the Act of 1917, which is therein defined as meaning 480 lb. for wheat and 312 lb. for oats. Section 4 supersedes the powers of enforcing proper cultivation hitherto exercised by the Ministry of Agriculture and Fisheries and County Agricultural Executive Committees under the Defence of the Realm Regulations and substitutes for those powers less drastic powers of enforcing cultivation according to the "rules of good husbandry" and of compelling the improvement of existing methods of cultivation with a view to maintaining and increasing the production of food, but without giving power to enforce the ploughing of grass land. There are also powers given of enforcing the execution of "necessary works of maintenance" against occupiers and owners of land and a new power of depriving an owner of the management of his land, whether or not in the occupation of tenants, who so "grossly mismanages the estate" as to prejudice materially the production of food thereon or the welfare of those engaged in its cultivation, and putting the management into the hands of a receiver and manager. "Necessary works of maintenance" include the maintenance and clearing of drains, embankments and ditches, the maintenance and repair of fences, stone walls, gates and hedges and the execution of repairs to buildings. The foregoing powers are made exercisable by the Minister of Agriculture and Fisheries after consultation with the County Agricultural Committees established under the Ministry of Agriculture and Fisheries Act 1919, and a right of appeal to arbitration is given to persons aggrieved by notices served under this section with regard to cultivation or the execution of necessary works of maintenance. Failure to comply with such notices will render the person in default liable to a

fine. The same section also gives power to compel occupiers to cut down or destroy injurious weeds on their land.

Part II of the Act is an amendment of the Agricultural Holdings Acts. Section 10 provides for the payment of compensation for disturbance to tenants quitting their holdings by reason of notices to quit given by the landlords after May 20, 1920. This right to compensation for disturbance is substituted for that given by Section 11 of the Agricultural Holdings Act 1908, and is much more comprehensive than the latter, for under the Act of 1920 with certain exceptions to be hereafter noticed compensation is given in all cases where the notice to quit comes from the landlord and not only in cases where the notice is given "without good and reasonable cause, and for reasons inconsistent with good estate management" as under the Act of 1908. The principal exceptions are when the tenant is not cultivating the holding according to the rules of good husbandry, where he has failed to pay his rent within a reasonable time or to remedy a breach of any term or condition of the tenancy consistent with good husbandry, where he has committed a breach of such a term or condition which is not capable of being remedied, where he has become bankrupt, and where he has refused or failed to agree to a demand in writing by the landlord for arbitration as to the rent of the holding. No compensation for disturbance will be payable unless the tenant has not less than one month before the termination of the tenancy given a written notice of his intention to claim or where the tenant has died within three months before the notice to quit. The amount of the compensation will be a sum representing the tenant's loss or expense incurred in connection with the sale or removal of his household goods, implements of husbandry, fixtures, farm produce and farm stock including expenses reasonably incurred in the preparation of his claims for compensation. But this sum is not left at large as under the Act of 1908. To avoid disputes it is to be computed at an amount equal to one year's rent of the holding unless it is proved that the loss and expense exceed such amount, in which case the sum recoverable will be the whole loss and expenses up to a maximum amount equal to two years' rent of the holding. For the purposes of this section a landlord may apply to the County Agricultural Committee for a certificate that the tenant is not cultivating the land according to the rules of good husbandry, and a certificate so granted will be treated as conclusive evidence on the point.

In one case compensation for disturbance will be payable when the notice to quit comes from the tenant and not from the landlord, that is where the landlord refuses or fails to agree to a demand in writing from the tenant for arbitration as to the rent to be paid for the holding and by reason of such refusal

or failure the tenant exercises his power of terminating the tenancy. The Act therefore in effect provides that except where the landlord and tenant agree as to an increase or reduction of rent, any question of such increase or reduction must be submitted to arbitration, for a refusal to submit will render a refusing tenant liable to lose his compensation for disturbance if the landlord in consequence serves a notice to quit, and will render a refusing landlord liable to pay such compensation if the tenant in consequence serves notice to quit. But these provisions of the Act do not apply where the demand for an increase or reduction of rent would take effect upon the expiration of two years from the commencement of the tenancy, or from the date of a previous increase or reduction of rent. In such cases a recourse to arbitration cannot be required.

The right of compensation for disturbance is by Section 11 extended to tenants of allotment gardens, and by Section 12 to workmen employed in agriculture and given the occupation of farm cottages whose occupation is terminated on account of the termination by the tenant of the holding of the employment, with certain exceptions, which include cases where the notice to terminate the occupation is given before the expiration of six weeks from its commencement and where it is given by reason of the workman's misconduct.

The law as to improvements for which compensation can be obtained is amended by Section 16, which gives a right to compensation for an increase in the value of the holding due to the adoption by the tenant of a special or high standard or system of farming above the standard or system (if any) required by the contract of tenancy, and by Section 15, which provides that where a landlord refuses to consent to the making of any improvement comprised in Part I of the First Schedule to the Act of 1908 (other than the erection, alteration or enlargement of buildings or an improvement in the Third Schedule) so as to give the tenant the right to compensation, and the improvement is one declared by regulation of the Minister of Agriculture and Fisheries to be within the purview of this section, then the tenant may apply to his County Agricultural Committee for a direction that the improvement is to be treated as if it were comprised in Part II of the First Schedule, so as to give him a right to execute it in default of the landlord doing so and to obtain compensation for its value on the termination of the tenancy.

The same section deals also with the market garden improvements mentioned in the Third Schedule of the Act of 1908, and provides that if a landlord refuses or fails to agree that the holding shall be treated as a market garden so as to give the tenant on quitting the right to compensation for market garden

improvements, such as the planting of fruit trees, fruit bushes, strawberries, rhubarb, &c., the County Agricultural Committee may, if satisfied that the holding is suitable for market gardening, direct that Section 42 of the Act of 1908 shall apply with the result of enabling the tenant to obtain compensation for such improvements. There is a saving clause added which applies what is known as the "Evesham custom," where any such direction is given and the tenancy is terminated by notice to quit given by the tenant, or by reason of his bankruptcy; that is to say, the landlord will not be liable to pay compensation in such cases if he allows the outgoing tenant to find a substantial and suitable person to take over the tenancy and to pay to the outgoing tenant all compensation payable to him.

The law as to notices to quit is amended by Section 28, which provides that a notice to quit a holding will be invalid if it purports to terminate the tenancy before the expiration of twelve months from the end of the then current year of the tenancy, so that a twelve months' notice to quit will henceforth be necessary in all cases, with certain small exceptions, which include a notice in pursuance of a provision in the contract of tenancy authorising resumption for some specified purpose other than agriculture, any notice given by a tenant to a sub-tenant, and any notice given before the commencement of the Act. Furthermore, even in the case of a tenancy for a fixed term of two years or upwards, at least a year's notice to quit will be necessary, for it is provided by Section 13 that any such tenancy shall not terminate on the expiration of the term except upon such notice given by either party, and if no such notice is given the tenancy will from the expiration of the term for which it was granted continue as a tenancy from year to year; but the section is not to apply to any tenancy granted or agreed to be granted before the commencement of the Act.

The Act also deals with arbitrations, and provides by Section 18 in effect that all claims by tenant against landlord or by landlord against tenant, and all questions as to the construction of the contract of tenancy, shall be determined by arbitration, and the right of recourse to the Court instead of to arbitration is apparently excluded. Provisions are also made for expediting and reducing the costs of arbitrations and for the constitution of a panel of arbitrators from whom any arbitrator nominated otherwise than by agreement must be selected.

Under Section 19 the landlord is given a right to compensation for deterioration of the holding caused by the tenant's failure to cultivate according to the rules of good husbandry or the terms of the contract of tenancy, and by Section 25 the removal of any manure or compost or any hay or straw or roots grown in the last year of the tenancy is forbidden until the

landlord or incoming tenant has been given a reasonable opportunity of purchasing the same.

The "rules of good husbandry" are frequently referred to in the Act, and a definition of them is given in Section 33, which includes under that expression the maintenance of the land clean and in a good state of cultivation and fertility, the maintenance and clearing of drains and ditches, the maintenance and repair of fences, stone walls, gates and hedges, the execution of repairs to the necessary buildings, and such rules of good husbandry as are generally recognised as applying to holdings of the same character and in the same neighbourhood.

## II.—DECISIONS OF THE COURTS.

1. *Labour*. There are two cases which arose under the Workmen's Compensation Act 1906 which should be noticed. The first is *Manton v. Cantwell* (89 L.J.P.C., 73; [1920] A.C., 781), which was an appeal from the Irish Court to the House of Lords. The question was whether a casual labourer employed to thatch a farmhouse in which the farmer resided was employed "for the purposes of the employer's trade or business," so as to render the employer liable for an accident which occurred to the labourer while so employed notwithstanding Section 13 of the Act which excludes liability in the case of a casual labourer not so employed. It was held that there was evidence which justified the County Court Judge in finding that the employment was for the purposes of the employer's trade or business so as to render him liable to pay compensation in respect of the workman's death. The House of Lords thus reversed the decision of the Irish Court of Appeal, which is noted in Vol. 79 of the R.A.S.E. Journal at p. 130. The second case under the same Act is *Bird v. Price* ([1920] W.C. & Ins. Rep., 142), where a woman employed as a farm labourer was told by her employer to go to work at a certain place and that she would be met at one point by his foreman, who would pick her and other women up and drive them to the place of work. She was met by the foreman with a van in which she had ridden before, and was told by him to get into it. She and other women, however, preferred to get into a farm cart, also belonging to the employer and driven by one of his men. The foreman told them they were silly fools to get into the cart, but he did not insist on their going in the van. The cart was upset on the way to work and the applicant was injured. It was held that the accident arose "out of and in the course" of the employment, and that the employer was therefore liable for the injury.

*Bickerdike v. Lucy* (89 L.J.K.B., 558) was a case under the provisions of the Corn Production Act 1917, relating to minimum

wages. A person was employed in gardens attached to and which supplied the house with produce. When the family were not in residence such produce as they required was sent to them weekly and the surplus was sold. It was held that he was not entitled to be paid the minimum rate of wages fixed by the Act unless the gardens were a "market garden," and that the fact that part of the produce was sold did not make them a market garden within the Act.

The case of *Hampton v. Smith* (89 L.J.K.B., 413) decided that it is not necessary under the Act to pay the minimum wages week by week. Hence where the employer hired a labourer for twelve months at a certain sum per annum with board and lodging which gave a weekly average wage less than the minimum weekly rate fixed under the Act, and an information was filed before the expiration of the year's hiring charging him with not paying wages to the labourer at a rate not less than the minimum wage, it was held that no offence had been committed as it could not be ascertained before the end of the year's service whether or not the minimum rate had been paid.

In *Gladstone v. Burton* (89 L.J.K.B., 302; [1920] 1 K.B., 608) it was held that the Regulations of 1918 made under the National Insurance Act 1911, Part I, Section 7, impose on employers the obligation to affix stamps to the contributors' cards before paying wages for the period in respect of which the contributions are payable, and that the obligation is not complied with by affixing within six days after the expiration of the period of currency of the card stamps in respect of all the weekly contributions payable during such period. Therefore magistrates should have convicted a farmer who failed to stamp the card of his workman weekly on or before payment of the wages.

2. *Stock*. In *McLaughlin v. Bailey* ([1920] 2 Ir.R., 310) the owner and occupier of a farm used it principally for the breeding of racehorses and hunters for sale. She kept upon the land a number of mares and two stallions. In addition to serving the farmer's own mares one of the stallions was used for the service of mares belonging to other owners, and for the service of those mares fees were received. It was held that the stallion fees so received from outsiders were liable to assessment under Schedule D of the Income Tax Acts, and were not included in the assessment under Schedule B in respect of the occupation of lands, tenements and hereditaments.

In *Palmer v. Powell* (89 L.J.K.B., 1119) it was held that the Slaughter-houses (Licensing) Order 1918, made under the Defence of the Realm Regulations, does not apply only to slaughter-houses for the slaughter of cattle intended for human food, and consequently a person who keeps premises for the slaughter of any cattle, whether intended for human food or

not, commits an offence unless he has obtained a licence under the provisions of the order.

3. *Landlord and Tenant.* There have during the past year been an unusual number of cases dealing with questions arising out of the relationship of landlord and tenant.

*Bradshaw v. Bird* ([1920] 3 K.B., 144) was a case under the Agricultural Holdings Act 1914, which gave a tenant compensation for disturbance if the tenancy of the holding was terminated by notice to quit in view of the sale of the holding, but which has now been repealed by the Agriculture Act 1920, which as mentioned above considerably extends the tenant's right to claim compensation for disturbance. Certain landlords gave notice in 1917 to their tenants to quit at Michaelmas, 1918, with a view to the sale of the farm. In October, 1917, they agreed to sell the farm to a purchaser. On July 18, 1918, the sale of the farm was completed. The question arose whether the original landlord or the purchaser who had become the landlord before the expiration of the tenancy was liable to pay compensation for disturbance under the Act of 1914 to the tenant. It was held that the purchaser, as being at the time when the tenancy came to an end entitled to receive the rents and profits of the land, was the person liable. It is to be noted that the question would not have arisen had the sale taken place after the passing of the Agricultural Land Sales (Restriction of Notices to Quit) Act 1919 (see R.A.S.E. Journal, vol. 80, p. 154), as in that case the sale would have avoided the then current and unexpired notice to quit.

*Cowdray v. Ferries* ([1919] S.C. 27) was a Scottish case dealing with the right to compensation for disturbance, where it was laid down by the House of Lords that it is for the arbitrator to determine all questions arising under the section that gives this right, including those connected with the time and validity of notices to quit and the time and validity of notices to claim compensation.

In *Thomson v. Galloway (Earl)* ([1919] S.C., 611), another Scottish case, it was held that the section giving the tenant a right to compensation for damage by winged game (Sect. 10, sub-s. 1 of the Agricultural Holdings Act 1908) extends to compensation for damage by winged game coming not from the landlord's own land but from that of a neighbouring proprietor, and even during the legal close season.

Two cases under the above-mentioned Agricultural Land Sales (Restriction of Notices to Quit) Act 1919 should be noticed. In *Robinson v. Nesbitt* (64 Sol. J., 291) Russell, J., held that the Act has the result of rendering null and void notices to quit in the event of sales (1) when the sale is a sub-sale of an interest purchased under a previous contract; (2) where



the sale is by an equitable as well as where it is by a legal owner; (3) where the notice is given by one person and the sale by another; (4) where the sale is only a part of the holding. The effect of this case is, however, to some extent avoided by the Agriculture Act 1920, which amends the Act of 1919 by enacting that it shall only apply where the sale is made by the person by whom the notice to quit was given. The other case of *Brooks v. Bloor* (64 Sol. J., 685; 36 Times L.R., 826) was a case of a sale of Church lands where the consents of the patron of the living and the Archbishop, Bishop and Queen Anne's Bounty were necessary for the validity of the sale to be testified by their execution of the conveyance to the purchaser. The contract of sale was entered into before the passing of the Restriction of Notices to Quit Act, but the consents of the persons whose consent was required was given by their joining in the conveyance to the purchaser after the passing of the Act and during the pendency of a notice to quit the land which had been given to the tenant. It was held that the notice to quit was not avoided as the contract of sale was entered into before the Act, and it made no difference that the necessary consents were not given till afterwards.

In *Premier Dairies Lim. v. Garlick* (89 L.J.Ch., 332; [1920] 2 Ch. 17) it was held that it is open to the parties to an agricultural lease to contract themselves out of the operation of Section 21 of the Agricultural Holdings Act 1908, which gives the tenant the right to remove buildings and fixtures erected by him, and that when the tenant covenants to leave, surrender and yield up to the lessor at the end of the term "all new and other buildings and erections," he will not be entitled to remove buildings and fixtures erected by him during the tenancy.

In *Re Harvey & Mann's Arbitration* (89 L.J.K.B., 687) the Court of Appeal held affirming the decision of the Norfolk County Court Judge that a tenant who omits to give to the landlord under the provisions of Section 21 notice of his intention to remove a fixture, whereby the landlord is prevented from exercising the option given to him by the Act to purchase the same, cannot afterwards obtain compensation for expenses or loss suffered through the removal of that fixture as part of his claim for compensation for disturbance.

*Clarke-Jervoise v. Scutt* (89 L.J.Ch., 218; [1920] 1 Ch., 382) was a case where the tenant had covenanted in 1894 not to plough up "any grass land" and to cultivate the land in a husbandlike manner. In 1896 he laid down to grass some of the land scheduled as arable in his tenancy agreement, and it continued in grass from that time. In 1919 he threatened to plough up the land so laid down. It was held that as the covenant not to plough up extended to "any grass land," it was not

restricted to grass land at the date of the letting and to plough up the land in question would be a breach of the covenant. It would also be a breach of the covenant to cultivate in a husband-like manner. This case is to be distinguished from *Rush v. Lucas* (79 L.J.Ch., 172; [1910] 1 Ch., 437) where the covenant was not so wide, being not to plough or break up "any of the pasture land," which was held only to extend to land in that condition at the commencement of the tenancy.

*Richards v. Davies* (89 L.J.Ch., 601) establishes that the tenant of a farm who by his tenancy agreement covenants not to underlet or permit any other person to occupy any part of the buildings, lands or premises without the consent of the landlord, commits a breach of that covenant by a sale or letting of grass keep on the farm without the landlord's consent.

*Hill v. Kirshenstein* (89 L.J.K.B., 1128; [1920] 3 K.B., 556) shows that a tenant who has paid his landlord's property tax must exercise his right of deduction from the next payment of rent. If he omits to do so he cannot legally deduct or claim it from the landlord subsequently.

In *Allison v. Scargill* (89 L.J.K.B., 1084; [1920] 3 K.B., 443) the tenancy agreement provided that the defendant should become tenant of the farm "from the 6th day of April next . . . until the 6th day of April, 1916, or such later date being the 6th day of April immediately following the sale of the farm." The farm was sold in October, 1919, and the plaintiffs claimed that by reason of the sale the tenancy determined on April 6, 1920. The defendant contended that he was entitled to the usual notice to quit. It was held that there was nothing in the clause repugnant to the nature of a tenancy from year to year, and that the tenancy had determined on April 6, 1920.

4. *Produce.* In *Kenny v. Cox* (89 L.J.K.B., 1258) the respondent was charged with selling milk not of the nature, substance and quality demanded. The public analyst stated that a quantity of extraneous matter was present in very microscopical quantities, consisting of dirty *débris*, being waste organic matter in a more or less advanced state of decomposition mixed with particles of dung, cotton and wool fibres, but the sample was otherwise good milk. The Justices, without calling on the defence, dismissed the charge, and on appeal their decision was confirmed and it was held that the charge had been rightly dismissed, for it was an attempt to set up an impossible standard and no *prima facie* case had been established against the respondent.

In *Kings v. Merriis* ([1920] 3 K.B., 566) the milk seller was not so fortunate. On analysis the milk was found to be deficient in non-fatty solids to the extent of 6.4 per cent. The respondent gave no evidence that the milk was in the same condition when

sold as it was when it came from the cows, but called a pharmaceutical chemist, who stated that milk varies considerably without being tampered with, that there were many causes creating variability in milk, that the district was a manufacturing one and the pasture affected by chemicals<sup>so</sup> that it would not produce high-class milk, and that accepting the analyst's certificate there was nothing to show that the milk was not genuine. The Justices dismissed the case, but wrongly as the Divisional Court decided. That Court held that where there is evidence of deficiency in the percentage required by the Sale of Milk Regulations, 1901, the presumption that the milk is not genuine arises, and unless rebutted there must be a conviction. To rebut the presumption the respondent must prove that the milk sold was in the same condition as when it came from the cows, that is that nothing had been added to or abstracted from it. The chemist's evidence did not rebut the presumption that this milk was not genuine. They therefore remitted the case to the Justices for a further hearing.

5. *Miscellaneous.* *Harvey v. Herefordshire County Council* (89 L.J.K.B., 601; [1920] 2 K.B., 395) was a case under the Fertilisers and Feeding Stuffs Act, 1906, which by Section 1 sub-section 1 requires the seller of any article as a fertiliser of the soil which has been subjected to any artificial process in the United Kingdom, or which has been imported from abroad, to give an invoice showing the respective percentages (if any) of nitrogen, soluble phosphates, insoluble phosphates and potash contained in the article. The same Act by Section 6 sub-section 1 makes it an offence not to give the invoice required by the Act or to permit any invoice or description of the article sold to be false in any material particular to the prejudice of the purchaser. The appellants were charged and convicted by Justices under this Act for selling shoddy for use as a fertiliser with an invoice which was false in stating that the shoddy contained 6 per cent. of ammonia. Section 1 sub-section 1 of the Act, requiring percentages of constituents to be given in the invoice, did not apply to this article as it had not been subjected to any artificial process. It was held that the sellers were rightly convicted under Section 6 sub-section 1 of the Act for giving an invoice which was false in a material particular, although the shoddy sold was not an article in respect of which an invoice was required to be given by Section 1 sub-section 1.

There have been two cases reported under the Small Holdings and Allotments Act 1908, and Land Settlement (Facilities) Act 1919. In *Re v. Bedfordshire County Council* (89 L.J.K.B., 425; [1920] 2 K.B., 465) it was held that an order for the compulsory taking of land for small holdings may be made by a county council under section 1 sub-section 1 of the Act of 1919

without any previous inquiry by or consent of the Ministry of Agriculture and Fisheries. It is apparent therefore that county councils have uncontrolled powers of making such compulsory orders, but the consent of the Ministry is necessary under Section 10 sub-section 1 of the Act before the next step is taken, viz. the giving of notice to treat in respect of the land comprised in the order. In *Gaskell v. Somersetshire County Council* (18 L.G.R., 245) the County Council were in communication with the plaintiff with a view of acquiring certain lands of his for the purpose of small holdings, and were informed that they would have the opportunity of purchasing at a sale by auction which he proposed to hold shortly. As soon as the plaintiff issued his announcement and particulars of sale the Council made an order for the compulsory acquisition of the land. The plaintiff moved for an injunction to restrain the Council from interfering with his auction sale by serving notice to treat under their compulsory order and from asserting that the order was valid, and contended that the Council had no power to make a compulsory order in this case as they had not shown that they could not acquire the land by agreement and on reasonable terms. Russell, J., granted an interlocutory injunction, and the Council appealed. The Court of Appeal on the balance of convenience dissolved the injunction, leaving the question as to the validity of the compulsory order open to be tried later on, but the case was never tried out.

In *Collis v. Amphlett* (89 L.J.Ch., 101; [1920] A.C., 271) the boundary of a certain common from the adjacent land came in question. In a map attached to an award made under a local Act for the regulation of the common the boundaries of the common were delineated by a line drawn along the line of the "growers" in the hedge dividing the common from the land of an adjacent owner and belonging to such owner. The owner claimed a "ditch width" on the outside of the line of growers, although there was in fact no ditch, on the analogy to the rule, where there is an actual ditch and a fence, that the ditch belongs to the owner of the land on which the fence stands. It was held that there was no presumption that the owner was entitled to "ditch width" on the outside of the line of growers in the absence of evidence that the hedge was originally planted inside the boundary line, and that any fence erected outside the line of growers by the landowner would be an encroachment on the common.

AUBREY J. SPENCER.

15 Old Square,  
Lincoln's Inn, W.C.

TABLE I.—Total Produce, Acreage, and Yield per Acre of  
1920 and 1919, with the Average

Crops	Total Produce		Acreage		Yield per Acre		Average of the Ten Years 1910-1919
	1920	1919	1920	1919	1920	1919	
WHEAT.							
	Qrs.	Qrs.	Acres.	Acres	Bush.	Bush.	Bush.
England . . .	6,515,000	7,728,000	1,824,037	2,150,281	28-6	28-8	30-7
Wales . . .	154,000	248,000	50,548	70,914	24-3	28-0	27-8
Scotland . . .	260,000	383,000	54,359	79,509	38-2	38-5	39-5
GREAT BRITAIN .	6,929,000	8,359,000	1,928,944	2,300,704	28-7	29-1	30-9
Ireland . . .	175,000	306,000	50,252	69,663	27-9	35-1	36-6
UNITED KINGDOM	7,104,000	8,665,000	1,979,196	2,370,367	28-7	29-2	31-1
BARLEY. <sup>1</sup>							
England . . .	5,082,000	5,074,000	1,537,735	1,405,643	31-1	28-9	31-2
Wales . . .	353,000	400,000	99,225	104,073	28-5	30-7	30-5
Scotland . . .	973,000	764,000	204,369	173,746	38-1	35-2	35-1
GREAT BRITAIN .	7,308,000	6,238,000	1,841,329	1,683,462	31-8	29-6	31-6
Ireland . . .	603,600	975,000	206,888	186,625	34-9	41-8	42-4
UNITED KINGDOM	8,211,000	7,213,000	2,048,217	1,870,087	32-1	30-9	32-7
OATS.							
England . . .	9,846,000	10,052,000	2,016,531	2,251,558	39-1	35-7	39-2
Wales . . .	900,000	1,365,000	249,093	312,175	28-9	35-0	35-1
Scotland . . .	5,157,000	5,305,000	1,032,198	1,119,811	40-0	38-2	39-0
GREAT BRITAIN .	15,903,000	16,722,000	3,297,822	3,674,544	38-6	36-4	38-8
Ireland . . .	6,706,000	8,773,000	1,332,050	1,442,458	40-3	48-7	50-7
UNITED KINGDOM	22,609,000	25,495,000	4,629,872	5,117,002	39-1	39-9	42-1
BEANS.							
England . . .	950,000	847,000	244,456	271,481	31-1	25-0	27-3
Wales . . .	6,900	7,300	1,858	2,460	29-5	25-5	27-3
Scotland . . .	26,900	32,900	5,726	6,654	37-6	39-4	37-0
GREAT BRITAIN .	983,800	887,000	252,040	280,595	31-2	25-3	27-5
Ireland . . .	"	"	"	"	"	"	42-7 <sup>b</sup>
UNITED KINGDOM	"	"	"	"	"	"	28-0 <sup>a</sup>
PEAS.							
England . . .	442,000	440,000	128,744	131,718	27-5	26-7	24-9
Wales . . .	1,500	1,400	567	531	22-2	21-7	22-4
Scotland . . .	270	230	85	103	25-7	18-0	24-6
GREAT BRITAIN .	443,770	441,630	129,396	132,352	27-4	26-7	24-9
Ireland . . .	"	"	"	"	"	"	29-7 <sup>b</sup>
UNITED KINGDOM	"	"	"	"	"	"	24-7 <sup>b</sup>

<sup>1</sup> The particulars for Ireland have been furnished by the Department of Agriculture and Technical Instruction for Ireland, and those for Scotland by the Board of Agriculture for Scotland. No Produce Statistics are collected for the Channel Islands and the Isle of Man.

<sup>a</sup> Including Peas.

<sup>b</sup> No hops are grown in any other part of the United Kingdom.

<sup>c</sup> Exclusive of a certain area (amounting in 1920 to 67 acres) the produce of which was cut green.

<sup>d</sup> Exclusive of a certain area (amounting in 1920 to 262 acres) the produce of which was cut green.

each of the Principal Crops in the United Kingdom <sup>1</sup> in  
of the Ten Years 1910-1919.

Crops—continued	Total Produce		Acreage		Yield per Acre		Average of the Ten Years 1910-1919
	1920	1919	1920	1919	1920	1919	
<b>POTATOES.</b>	Tons	Tons	Acres	Acres	Tons	Tons	Tons
England . . .	3,068,000	2,571,000	518,933	446,341	5-9½	5-8	6-2
Wales . . .	68,000	162,000	27,682	29,035	3-5½	5-6	5-6
Scotland . . .	1,287,000	832,000	182,477	154,598	7-6	5-4	6-4
<b>GREAT BRITAIN .</b>	4,388,000	3,565,000	707,092	629,972	6-2	5-7	6-2
Ireland . . .	1,966,000	2,747,000	584,316	588,802	3-4	4-7	5-4
<b>UNITED KINGDOM</b>	6,374,000	6,312,000	1,291,408	1,218,774	4-9	5-2	5-8
<b>TURNIPS AND SWEDES.</b>							
England . . .	13,484,000	10,399,000	*932,829	*923,619	14-5	11-3	12-4
Wales . . .	709,000	760,000	55,622	57,919	12-8	13-1	14-9
Scotland . . .	7,092,000	7,148,000	425,255	426,451	18-1	16-8	16-3
<b>GREAT BRITAIN .</b>	21,885,000	18,905,000	1,413,706	1,407,889	15-5	13-0	13-7
Ireland . . .	4,107,000	4,487,000	276,507	273,460	14-9	16-4	17-1
<b>UNITED KINGDOM</b>	25,992,000	22,792,000	1,690,213	1,681,349	15-4	13-6	14-2
<b>MANGOLD.</b>							
England . . .	7,166,000	6,098,000	*373,699	*381,344	19-2	16-0	19-0
Wales . . .	141,000	198,000	10,579	13,069	13-3	15-0	17-6
Scotland . . .	29,000	43,000	1,768	2,507	16-4	17-0	19-6
<b>GREAT BRITAIN .</b>	7,336,000	6,337,000	386,046	396,920	19-0	16-0	18-9
Ireland . . .	1,246,000	1,432,000	77,447	74,639	16-1	19-1	19-9
<b>UNITED KINGDOM</b>	8,582,000	7,769,000	463,493	471,759	18-5	16-5	19-1
<b>HAY from CLOVER, SAIN-FOIN, &amp;c.</b>					Cwt.	Cwt.	Cwt.
England . . .	2,327,000	1,600,000	1,486,149	1,342,131	31-3	23-8	28-8
Wales . . .	257,000	189,000	188,293	159,122	27-3	21-3	25-3
Scotland . . .	694,000	521,000	425,256	394,246	32-6	28-4	30-8
<b>GREAT BRITAIN .</b>	3,278,000	2,290,000	2,099,698	1,895,499	31-2	24-2	28-9
Ireland . . .	—	—	—	—	—	—	36-9 <sup>12</sup>
<b>UNITED KINGDOM</b>	—	—	—	—	—	—	31-8 <sup>12</sup>
<b>HAY from PERMANENT GRASS.</b>							
England . . .	5,071,000	3,028,000	3,902,520	3,694,597	26-0	16-4	21-0
Wales . . .	556,000	369,000	492,428	475,912	22-6	19-4	19-6
Scotland . . .	248,000	191,000	162,164	147,679	32-6	25-9	29-7
<b>GREAT BRITAIN .</b>	5,875,000	3,608,000	4,547,112	4,318,188	25-8	16-7	22-0
Ireland . . .	—	—	—	—	—	—	42-1 <sup>10</sup>
<b>UNITED KINGDOM</b>	—	—	—	—	—	—	27-2 <sup>10</sup>
<b>HOPS.</b>	Cwt.	Cwt.					
England <sup>4</sup> . . .	281,000	189,000	121,002	16,745	13-4	11-3	10-1

<sup>1</sup> Exclusive of a certain area (amounting in 1920 to 8,079 acres) the produce of which was cut green.

<sup>2</sup> Exclusive of a certain area (amounting in 1920 to 10,828 acres of beans and 36,652 acres of peas) the produce of which was cut or picked green.

<sup>3</sup> Exclusive of a certain area (amounting in 1920 to 2,957 acres of turnips and swedes, and 1,568 acres of mangolds) on which the crops were grown for the production of seed.

<sup>4</sup> Figures for Ireland not available. The total acreage of hay (from clover, &c., and permanent grass) in Ireland in 1920 was 2,613,320 acres, and the total production 5,547,000 tons.

<sup>10</sup> Average of 9 years only.

TABLE II.—Acreage under Crops and Grass; and Number of Live Stock, as returned on June 4, 1920 and 1919.

	England		Wales	
	1920	1919	1920	1919
	Acres		Acres	
Total Area (excluding water) . . . . .	32,385,350		4,751,276	
Total Acreage under Crops and Grass <sup>1</sup> . . . . .	23,847,420	24,069,298	2,659,585	2,678,655
Arable Land . . . . .	11,180,322	11,412,353	839,423	896,523
Permanent Grass . . . . .	12,667,104	12,656,945	1,820,162	1,782,132
Wheat . . . . .	1,824,104	2,150,281	50,548	70,914
Barley or Bere . . . . .	1,537,067	1,405,643	99,255	104,071
Oats . . . . .	2,021,418	2,252,151	250,385	312,175
Mixed Corn . . . . .	121,560	115,822	25,917	20,339
Rye . . . . .	95,063	106,132	526	386
Beans . . . . .	255,063	281,090	2,074	2,636
Peas . . . . .	164,895	162,775	782	704
Potatoes . . . . .	518,833	446,341	27,082	29,035
Turnips and Swedes . . . . .	935,786	925,579	55,622	57,819
Mangold . . . . .	375,237	382,982	10,579	13,669
Cabbage . . . . .	61,218	50,855	883	737
Kohi-Rabi . . . . .	10,780	9,437	240	192
Rape . . . . .	86,565	79,396	13,712	13,837
Vetches or Tares . . . . .	120,513	76,239	1,219	723
Lucerne . . . . .	44,268	38,519	233	242
Hops . . . . .	21,002	16,745	—	—
Small Fruit . . . . .	53,084	58,096	730	603
Clover, Sainfoin, and Grasses under Rotation . . . . .	2,161,750	2,009,385	286,604	249,650
Other Crops . . . . .	211,987	204,942	1,996	2,103
Bare Fallow . . . . .	556,066	639,073	10,536	11,366
Horses used for Agricultural purposes <sup>2</sup> . . . . .	No. 708,848	No. 728,509	No. 82,061	No. 85,669
Stallions being used for service . . . . .	5,766	6,097	1,126	1,167
Unbroken (One year and above) . . . . .	193,561	189,966	35,032	33,897
Horses Under one year . . . . .	78,168	84,107	19,130	19,396
Other Horses . . . . .	220,397	214,914	23,699	22,880
TOTAL OF HORSES . . . . .	1,204,740	1,223,613	160,968	163,211
Cows and Heifers in Milk . . . . .	1,587,615	1,693,808	240,118	249,358
Cows in Calf but not in Milk . . . . .	218,884	203,625	24,125	28,696
Heifers in Calf . . . . .	253,879	290,674	23,210	26,532
Bulls being used for service . . . . .	69,632	75,969	12,388	13,069
Other Cattle—Two years and above . . . . .	908,297	965,861	97,538	92,242
" " One year and under two . . . . .	938,732	1,071,970	176,270	190,422
" " Under one year . . . . .	751,130	1,007,555	155,995	195,025
TOTAL OF CATTLE . . . . .	4,818,166	5,389,462	728,639	805,077
Ewes kept for Breeding . . . . .	3,777,237	4,367,770	1,331,215	1,306,530
Rams and Ram Lambs to be used for service . . . . .	111,228	108,165	44,578	48,562
Other Sheep—One year and above . . . . .	2,251,325	2,779,276	597,418	632,021
" " Under one year . . . . .	4,084,874	4,644,348	1,184,498	1,147,021
TOTAL OF SHEEP . . . . .	10,224,664	11,899,549	3,158,009	3,224,754
Sows kept for Breeding . . . . .	262,516	225,748	27,030	25,094
Boars being used for service . . . . .	18,900	16,069	2,033	2,513
Other Pigs . . . . .	1,532,961	1,985,425	150,484	143,709
TOTAL OF PIGS . . . . .	1,814,377	1,627,242	179,547	171,259

<sup>1</sup> Not including Mountain or Heath Land.<sup>2</sup> Including Mares kept for breeding.

TABLE III.—Hops :—Total Produce, Acreage, and Yield per Acre, in 1920 and 1919, in each County of England in which Hops were grown; and the Average Yield of the Ten Years 1910-1919.

COUNTIES	Total produce		Acreage		Yield per acre		Average of the Ten years 1910-19
	1920	1919	1920	1919	1920	1919	
	Cwt.	Cwt.	Acres	Acres	Cwt.	Cwt.	Cwt.
TOTAL FOR ENGLAND	281,000	189,000	21,002	16,745	13.4	11.3	10.1
Kent							
East . . .	40,000	27,000	3,258	2,520	15.2	10.6	10.8
Mid. . .	72,000	45,000	4,520	3,652	15.9	12.4	11.5
Weald . .	85,000	50,000	5,710	4,578	14.8	11.4	10.6
Total—Kent	206,000	122,000	13,488	10,550	15.3	11.6	11.0
Hampshire . . .	10,000	7,100	838	757	11.8	9.4	10.1
Surrey . . . .	2,000	1,500	172	181	12.7	8.2	8.1
Sussex, East . .	25,000	14,300	1,722	1,361	14.6	10.5	9.8
West . . .	1,000	600	66	53	14.7	11.3	11.3
Gloucester . . .	—	—	4	—	—	—	4.2 <sup>1</sup>
Hereford . . . .	23,000	26,000	2,993	2,415	7.7	10.9	7.8
Salop . . . . .	120	470	52	47	2.3	10.0	7.2
Worcester . . . .	14,000	16,600	1,667	1,372	8.3	12.1	8.3

<sup>1</sup> Average of 7 years only.

TABLE IV.—Annual Average Prices, per Imperial Quarter and per Imperial Bushel, of British Corn, in England and Wales, from 1914 to 1920; with the Value of £100 of Tithe Rent-Charge, based on the Septennial Average Prices.

YEAR	Annual average price per Imperial Quarter			Annual average price per Imperial Bushel			Value of tithe rent-charge of £100 <sup>1</sup>	
	Wheat	Barley	Oats	Wheat	Barley	Oats		
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£	s. d.
1914	34 11	27 2	20 11	4 4½	3 4½	2 7½	77	1 4½
1915	52 10	37 4	30 2	6 7½	4 8	3 9½	83	2 6½
1916	58 5	53 6	33 5	7 3½	6 8½	4 2	92	1 0½
1917	75 9	64 9	49 10	9 5½	8 1	6 2½	109	3 11
1918	72 10	59 0	49 4	9 1½	7 4½	6 2	109	3 11
1919	72 11	75 9	52 5	9 1½	9 5½	6 6½	109	3 11
1920 <sup>2</sup>							109	3 11

<sup>1</sup> The Septennial Average Price of British Corn, for the seven years ended 1835, upon which the amount of Tithe Rent-charge was calculated, was for Wheat 7s. 0½d., for Barley 6s. 11¼d., and for Oats 5s. 6d., per Imperial Bushel. The Tithe Act, 1918, fixes the value of Tithe Rent-charge up to the year 1925 inclusive, at the sum payable in 1918, i.e., the value based on the septennial averages for the period ended 1917.

<sup>2</sup> Figures for 1920 not yet published.



## NOTES, COMMUNICATIONS, AND REVIEWS.

**The Italian Agronomical Society.**—The Italian Agronomical Society has been started in Rome with temporary headquarters in Via dei Crescenzi No. 26 (at the "Rivista di Biologia") with the idea of uniting all branches of science in any way connected with agriculture. The need of the methodical application of study and research in the field of Agricultural Science is stronger in Italy than elsewhere, where the study of specific problems has been up to the present somewhat neglected, and where particular conditions of various kinds render these problems more numerous and important than elsewhere. The limited finances of the nation, so acute in these times, make the need of a wider knowledge and a powerful organisation in connection with agriculture more keenly felt than ever.

The scientific study of the various branches of agricultural problems in the south of Italy cannot be considered individually, but ought to be founded on experiments conducted in a number of cases, under the most widely different conditions judged from the same point of view. Thus the individual scientific forces in each case which constitute the particular interest of the Society, and on which it specialises, are brought under the one directing head which combines the ideas and the experiments, and can offer to the Government those which are best and most reliable, by which to explain its action in favour of agricultural pursuits. The technical organisation which is being constituted in Italy really represents at the present time a great hope because it has been supported by almost all Italian scientists, whether biological, chemical, or agricultural.

The organisation of the Society is proceeding rapidly, the Advisory Committee having already been nominated, the statutes formulated and approved, and the main lines of immediate action decided upon with a plan for five branches of study, chosen from those capable of solving the most pressing problems.

The first sitting of the Committee held in Rome, July 29, arranged the basis of activities of the Society. The delegates for the principal centres of study were nominated. It was arranged to commence work on certain points with a view to starting at once on the practical field of work, taking into account the most urgent problems of the moment. Thus five branches were decided upon, and the studies will be carried out by means of special commissions composed of the most worthy and noted specialists in the particular branch concerned. 1st. Interesting

researches on the best form of utilisation of arid and poor territory, with special attention paid to the resistance of drought, indicative of the adaptability of plants to drought (Professo Borzi, Director of the Colonial Botanical Institute Gardens, Palermo). 2nd. Research to investigate the limits of the yield capacity of wheat in southern areas, especially in connection with physiological features, influenced by physico-meteorological facts in that latitude (Dott. V. dei Duchi Rivera). 3rd. Research and means of combating the injurious insects to the olive (Sen. B. Grassi, Director of the Institute of Anatomy, University of Rome). 4th. Research on the utilisation of leucite deposits abundant in Italy, for the production of potash manures (Dott. Borghesani, International Institute of Agriculture, Rome). 5th. Studies as to the cause and the expected results of root rot with a view to combat the said disease which destroys Sicilian citron fruits.

The special Commissions inaugurated to investigate the various branches of Agricultural Science were constituted and the delegates for the different districts of Italy were nominated. In the midst of the evident chaos and disorder caused at the close of the war, the fact that the Italian Agronomist aims at instituting an organisation for study justifies the hope of a successful issue from present difficulties.

**L'Agriculture moderne**, by Daniel Zolla, Professeur à l'école de Grignon (Flammarion, Paris).

"If our young farmer has any relation, friend, or confidential bailiff that he can trust his farm to for ten days or a fortnight, let him now take his nag for a summer tour, to view some farms in well-cultivated counties, and to introduce himself to the conversation of his intelligent brethren, from whom he will be sure to learn something useful." Thus Arthur Young in June, 1800. *Mutato nomine* the advice still holds, and from few of the farmer's "intelligent brethren" can he learn more than from the French experts, who combine practical common sense with the power of philosophical generalisation characteristic of their race. Professor Zolla of the well-known School at Grignon here sets out his views on agriculture; the treatment is broadly scientific rather than practical. The improvements of the last century were many and their effects striking: in 1789 the population of France was 26,500,000; before the war it had increased to 40,000,000, who were not only being fed from the same area of land, but were being better fed. Progress is attributed only in part to the development of the cultural methods usually held to account for most of it; the chief factors are the development of agricultural capital, of means of transport, and of specialised

farming ; in other words, progress has resulted from both technical and economic developments. The dominating circumstance in agriculture is that human effort is not the determining factor : men may sow, but they cannot ensure that they will reap : the harvest depends on the plant, the season, and other natural agencies entirely, or almost entirely, beyond human control. The position therefore differs fundamentally from that in manufacturing concerns where almost everything is determined by human effort.

The simplest method of cultivation is afforestation, which when properly carried out is very profitable in France. "Money seems to tumble out of the soil," writes an ardent forester. The more usual and necessary culture, however, is that of crops which implies returning something to the land. He wisely accepts Dombasels' defence of the old open-field system as the most suitable for the times and circumstances. Its simplicity enabled it to be worked by men without capital or knowledge, for which reason it still survives in some of the new countries ; but in crowded countries it has gone.

The chief factor in the improvements of the last century was the introduction of artificial manures, which he attributes to the Duke of Richmond instead of to Lawes. He describes the remarkable effects produced by phosphates on the granite, silurian and Devonian soils of the west of France, notably Brittany and Maine, which have led to a marked increase in the acreage of wheat and in the number of animals kept. The nitrogenous and potassic fertilisers have also proved highly effective. But there are still great advances to be made. More attention to water supply is very necessary. Parts of France are already irrigated : 34,000 hectares of arable and 82,000 hectares of grass land ; but much remains to be done and the problem is not entirely solved. Perhaps dry farming methods will help ; these are described at some length, and some of the Californian results are given ; at any rate the methods are worth trying in Algeria. Drainage also is certainly needed in places and, as in England, it was unfortunately becoming less common before the war : the mole drain, however, does not seem to have been tried.

The author then proceeds to look to the future and see what of modern science holds out most hope for the agriculturist. Soil microbiology and soil chemistry both offer much promise. He is an ardent supporter of Whitney's hypothesis that plants suffer more frequently from plant toxins than from exhaustion of nutrients ; a view, however, which is not widely adopted by other agricultural chemists.

Having discussed at length the possibility of improving soils he turns to the improvement of the plant, showing how by selection and breeding the yield of sugar per ton of beet was

raised from 55 to 100 kilograms, and how the phylloxera was controlled by the introduction of American vines. There is no question that the plant breeder can render conspicuous help to the agriculturist.

He next discusses the animal, and like some of the leading British experts, emphasises the importance of early maturity for animals which are to be slaughtered, and the need for steady improvements in all breeds of cattle.

Finally the economic problem is discussed. There is—or was before the war—a rural exodus in France just as in England, but this does not disturb the author. He attributes it to the greater producing power of the rural population which renders unnecessary the presence of so many men on the land for the purpose of raising food; the balance is therefore available for other occupations.

The book is one that every thoughtful farmer will enjoy reading, though he will not learn from it how the French manage their farms.

E. J. RUSSELL.

**Conifers and their Characteristics.** Charles Coltman-Rogers (London: John Murray, price 21s. net).

The author of this volume has acted for many years as Chairman of the Forestry Committee of the Royal Agricultural Society of England, and now he adds to our indebtedness by producing a most interesting volume. It is rarely that a book contains so much of the personality of the writer. On almost every page there are literary references, or classical quotations, or Biblical extracts, or quips of fancy, or quaint comparisons, which carry the reader happily along from one scientific fact to the next. Thus, about *Abies Webbiana*: "That it finds our climate to be generally unaccommodating is unfortunate, since it is a tree that is all-beautiful without and as all-glorious within, as those king's daughters that, we are told, upon the Psalmist's authority, at a moment of time when his heart was inditing of a good matter, were fitt'd to enter king's palaces." Or "*The Lambertiana* has only one rival in the championship, and if *Coulteri* carries off the welter-weight prize, the *Lambertiana* outpaces its rival in the long-distance stakes, while the *Aya-cahuite* is a close runner-up."

The author arranges the many species of the respective genera into convenient groups and discusses their botanical characteristics and æsthetic value. It is a book on *trees*, in which silviculture or economic considerations have but little place.

The first section of the book deals with Pines, the second with

the Silver Firs. We are reminded that if, on looking over a mature wood, a certain number of trees overtop the others, these are almost certain to be examples of the common silver fir. The separation of the species of this large genus is based on the leaves, which may be arranged equally all round the shoot, or in a plane on two sides (pectinate). They may cover over the upper side of the shoot or leave it exposed, they may or may not vary markedly in length, the apex may be notched or entire, blunt or sharp, and so on. Similarly as regards the branchlets and shoots, the points of distinction to be noted being (a) colour, (b) presence or absence of pubescence, (c) smoothness or roughness of the surface.

Group I, with leaves arranged radially all round the shoot comprises *A. pinsapo* and *A. cephalonica*. The former comes from a very limited area in Spain and the latter from Greece and the adjoining islands. The former does not seem to find the climatic conditions of this country entirely to its taste, and we cannot therefore endorse the statement that "Both trees merit the universal recommendation to plant bestowed upon them by the authorities."

Group II comprises species whose leaves are arranged horizontally along the sides of the shoot. The most important member of this group is the common silver fir of Europe (*A. pectinata*). This tree has always been rather hard to establish in Britain on account of its liability to injury from spring frosts, and this difficulty has been increased of late years by reason of the spread of an *Aphis*, which soon brings young plants into an unhealthy condition. Another member of the group, *A. grandis*, has proved much more resistant to attack, and is now very generally substituted for *A. pectinata*. Moreover, it is a faster growing tree, and in fact in this respect does not fall far short of the Douglas fir and Sitka spruce.

Of Group III, the upper surface of whose shoots is obscured by leaves, *A. Nordmanniana* is the commonest species. When at its best it shows a fine dense mass of dark green foliage, but unfortunately of late years it has often been severely crippled by attacks of *Aphis*.

Of the members of the other three groups, *A. nobilis* is dismissed with few words and no recommendation, although it has probably been more extensively planted for ornamental purposes in this country than any other silver fir. Moreover, it is the one that is best adapted to growth at high altitudes, as is proved by its success, in situations well over a thousand feet, at such places as Corrour and Ardvreckie in Inverness-shire, and Kidlands in Northumberland.

Mr. Coltman-Rogers gives a great character to the Douglas fir, and all who have had experience of this remarkable tree will

endorse his good opinion. "We know, and that is all, that some occult influence impels the Douglas to grow with more celerity than any other forest tree we plant in masses. . . . Its timber results are more than promising, they are an accomplished fact. Its rapidity of growth is phenomenal." The author, in discussing situations unsuitable to the Douglas fir, fails to mention its aversion to lime. This, and the fact that it is apt to lose its leader when exposed to the full force of heavy gales, are its most serious limitations. Taken all in all it is beyond question the most valuable species of forest tree that has ever been introduced into this country.

In subsequent chapters the author learnedly discourses on the spruces, cypresses, junipers, yews, and other less important members of the Order Coniferae. Then follows a useful set of tables to assist in the identification of genera and species. These, by many, will be regarded as the most useful part of the book, which finishes with a glossary of terms.

The whole work is unconventional in treatment, even to the extent of systematically ignoring the recognised rules of nomenclature, the specific names being invariably spelt with a capital letter. There are certain inaccuracies that are not, however, serious, as for instance, when on p. 141 in consecutive lines "Brocklesbury" is printed for Brocklesby, and "*Arboricultural Journal*" for *Quarterly Journal of Forestry*.

W. SOMEERVILLE.

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## THE DARLINGTON SHOW, 1920.

*President*: HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

FOR the second time in the history of the Society the Annual Show was held at Darlington. On the previous occasion, in 1895, the site was at Hummersknott, which was most picturesquely situated; but, having regard to the distance of Hummersknott from the Railway Station, the Darlington Local Committee decided to secure 120 acres of land adjacent to the North Eastern Railway Station, with the sidings running into the Yard. While the surrounding scenery could not compare with that at Hummersknott, the convenience to exhibitors and the public was very great.

As will be seen from the following Table, the number of entries and of visitors to the Show greatly exceeded those of 1895:—

Year	President	Implements entered	Entries of Live Stock	Number of persons admitted	Financial Result. (+ = Profit — = Loss)
1895	Sir J. H. Thorold, Bart.	5,855	1,703	100,310	+ £653
1920	H.R.H. Prince of Wales, K.G.	4,809	3,463	182,992	— £7,766

In both the Implement and Live Stock, &c., Sections, the entries were numerous and the general excellence of the exhibits was more pronounced than at any previous Show. The Darlington Show can safely be described as excellent, although the financial result was nothing less than disastrous.

The excess of expenditure over receipts on this occasion must be attributed to the increased cost of labour and materials and railway charges for the carriage of plant, timber, &c.

The Show opened on Tuesday in brilliant weather, but just as the judging of the Live Stock Classes commenced there was a shower of rain. On the whole, however, the weather conditions were very pleasant. The attendance on this day exceeded that of any previous "Judging" day, and by 10 o'clock the day's stock of catalogues was completely sold out.

On Wednesday His Royal Highness the Duke of York visited the Show, having motored from Wynyard Park with the Marquess and Marchioness of Londonderry, Lady Maureen Stewart, and other guests. Before reaching the Showyard His Royal Highness went to the Town Hall, where he was received by the Mayor, Members of the Corporation and other Officials of the Town and County. An address of welcome was read by the Town Clerk and presented by the Mayor (Councillor Thomas Crooks). His Royal Highness, in reply, expressed his gratification at being able to

follow the example of his father and mother and visit the borough on the occasion of the Royal Agricultural Show. On arriving at the Showyard the Duke of York was received at the entrance by Sir Gilbert Greenall, the Honorary Director, and proceeded to the Royal Pavilion, outside which Members of Council and representatives of the Counties of Durham, Northumberland and Yorkshire were assembled. Subsequently His Royal Highness attended the General Meeting of Governors and Members of the Society, the Marquess of Londonderry (Acting-President) being in the Chair. In opening the proceedings Lord Londonderry deeply regretted the absence of H.R.H. the Prince of Wales, who was President of the Society, but who, as they all knew, was visiting the Overseas Dominions, and making friends amongst our brethren in distant parts of the Empire. His Lordship extended the warmest greetings on behalf of the Society to the Duke of York, who had been good enough to visit the Show, thus giving evidence of his participation in the keen interest the Royal Family always took in everything pertaining to the welfare of the people and especially in the progress of Agriculture. He then said that he had great pleasure in asking His Royal Highness to become a Member of the Society, and, on the election being carried by acclamation, handed His Royal Highness the Member's Badge. The Duke of York then expressed his pleasure at being able to attend the Show in the year that his brother, the Prince of Wales, was President of the Society, and thanked Lord Londonderry and the Governors and Members for making him a Member of the Society. He congratulated all those responsible for the success of the Darlington Show.

The Mayor, in response to the resolution of thanks to the Mayor and Corporation of Darlington, said that the Corporation had given the Society their cordial support and co-operation in connection with the Show. Darlington was undoubtedly a fine agricultural centre and they also had railway and industrial resources of great importance. He trusted that this country would so build up its Agriculture that in the future it would not be necessary to be so dependent as it had been upon supplies of food from abroad. At the close of the Meeting His Royal Highness returned to the Royal Pavilion, and after luncheon made a tour of inspection of the Showyard, proceeding later to the Grand Stand at the Horse Ring. His Royal Highness left the Showyard by the Hundens Lane Gate in order that he might pass by the Isolation Hospital, and this kind action was gratefully appreciated by the large number of patients who, otherwise, would not have had an opportunity of seeing His Royal Highness.

On Thursday the Duke of York again visited the Show and



**COMPARATIVE STATEMENT OF ENTRIES, &c.,  
AT TWO SHOWS HELD AT DARLINGTON IN 1895 AND 1920.**

HORSES AND CATTLE	1895		1920		GOATS, SHEEP, & PIGS, POULTRY, RABBITS, PRODUCE	1895		1920	
	Classes	Entries	Classes	Entries		Classes	Entries	Classes	Entries
<b>HORSES :—</b>					<b>GOATS :—</b>				
Prizes	—	£2,012	—	£3,600	Prizes	—	—	15	14
Shires	7	93	11	65	<b>SHEEP :—</b>				
Clydesdales	7	70	9	78	Prizes	—	£1,170	—	£2,200
Suffolks	5	34	10	68	Oxford Down	4	25	5	4
Peterson	—	—	5	41	Shropshire	4	93	7	6
Hunters—					Southdown	4	50	6	6
Breeding Classes	12	173	12	83	Hampshire Down	4	38	6	4
Riding Classes	—	—	7	60	Suffolk	4	23	6	4
Polo and Riding					Dorset Horn	2	8	4	1
Ponies—					Ryeland	—	—	5	9
Breeding Classes	—	—	5	24	Kerry Hill (Wales)	—	—	4	2
Hack and Riding					Lincoln	4	27	6	6
Ponies	—	—	5	36	Leicester	4	44	5	6
Arabs	—	—	2	11	Border Leicester	5	47	4	2
Cleveland Hays	7	45	4	14	Wensleydale	5	47	7	2
Coach Horses	7	34	4	14	Lonk	2	8	3	1
Hackneys	12	106	7	37	Derbyshire Gristone	—	—	2	—
Hackney Ponies	3	18	4	15	Kent or Romney	—	—	—	—
Dales Ponies	—	—	4	30	Marsh	2	15	6	4
Fell Ponies	—	—	4	9	Cotswold	4	12	4	1
Welsh Ponies	—	—	5	14	Devon Long Wool	—	—	3	—
Shetland Ponies	2	15	2	16	South Devon	—	—	5	1
Driving Classes	2	20	8	53	Dartmoor	—	—	3	—
Trade Turnouts	—	—	4	4	Cheviot	3	12	4	—
Pit Ponies	2	11	2	16	Herdwick	2	14	3	—
Agricultural Horses	3	26	5	19	Welsh Mountain	2	14	3	—
Jumping	—	—	5	72	Blackfaced Mountain	—	—	—	—
					Blackfaced Dales	3	28	4	—
Total for HORSES	60	650	124	786	Bred	—	—	4	—
<b>CATTLE :—</b>					Total for SHEEP	58	505	109	73
Prizes	—	£1,740	—	£3,077	<b>PIGS :—</b>				
Shorthorn	7	124	11	206	Prizes	—	—	—	£1,600
Dairy Shorthorn	—	—	10	171	Large White	—	—	8	11
Lincolnshire Red	—	—	8	60	Middle White	—	—	8	—
Shorthorn	—	—	8	86	Tamworth	—	—	6	—
Hereford	6	50	8	86	Berkshire	—	—	8	5
Devon	4	28	6	30	Large Black	—	—	6	—
South Devon	—	—	5	27	Lincolnshire Curly	—	—	—	—
Longhorn	—	—	4	11	Coated	—	—	6	—
Sussex	4	20	5	20	Gloucestershire Old	—	—	—	—
Welsh	2	8	6	30	Spots	—	—	6	11
Red Poll	4	22	6	60	Cumberland	—	—	6	—
Park Cattle	—	—	3	13	Wessex Saddleback	—	—	6	—
Aberdeen-Angus	7	60	6	93	Essex	—	—	6	—
Galloway	7	40	5	33	Total for PIGS	—	—	66	82
Highland	2	3	2	16	<b>POULTRY :—</b>				
Ayrshire	4	14	3	9	Prizes	—	£234	—	£1,100
British Friesian	—	—	6	96		84	769	154	—
Jersey	5	91	7	90	<b>RABBITS and</b>				
Guernsey	4	32	7	63	<b>CAVIES :—</b>				
Kerry	2	13	5	27	Prizes	—	—	—	£174
Dexter	2	14	5	42	Rabbits	—	—	37	—
Shetland	—	—	2	7	Caives	—	—	12	—
Dairy Cattle	4	23	2	15	<b>PRODUCE :—</b>				
Milk Yield	—	—	13	118	Prizes	—	£286	—	£1,100
Butter Tests	—	—	3	81		34	476	50	—
Total for CATTLE	64	548	138	1,374					

**Grand Totals for**  
**LIVE STOCK, POULTRY,**  
**and PRODUCE.**

1895 . 309 Classes . 2,948 Entries . £5,608  
 1920 . 714 Classes . 6,093 Entries . £11,700

<sup>1</sup> Including £161 for Competitions.

<sup>2</sup> Including £300 for Horticultural Exhibition.

STATEMENT OF ENTRIES FOR THE 1920 SHOW, COMPARED WITH PREVIOUS YEARS.

*Entries of Live Stock, Poultry and Produce.*

	Darlington, 1920	Cardiff, 1919	Manchester, 1918	Nottingham, 1915	Shrewsbury, 1914	Bristol, 1913	Doncaster, 1912	Norwich, 1911	Darlington, 1905
Horses . . .	1714	1569	1518	1500	1819	1584	1773	1716	650
Cattle . . .	1,175	1067	1003	1002	1,272	1,138	1,089	1,065	548
Goats . . .	143	91	92	—	—	—	—	—	—
Sheep . . .	739	586	607	575	1886	736	1734	748	505
Pigs . . .	692	389	321	360	417	394	1426	416	—
Total. . .	3,463	2,502	2,341	2,297	3,394	2,852	3,022	2,943	1,703
Poultry. . .	1,476	1,383	1,519	1,286	1,373	1,436	1,242	1,218	769
Rabbits. . .	390	278	—	—	—	—	—	—	—
Cavies . . .	107	—	—	—	—	—	—	—	—
Produce . . .	475	387	565	461	895	685	550	670	474

<sup>1</sup> Exclusive of Double Entries.

<sup>2</sup> Exhibition of Cattle, Sheep and Pigs prohibited by order of Board of Agriculture.

<sup>3</sup> Exhibition of Pigs prohibited by order of Board.

*Shedding in Implement Yard (in Feet).*

Description of Shedding	Darlington, 1920	Cardiff, 1919	Manchester, 1916	Nottingham, 1915	Shrewsbury, 1914	Bristol, 1913	Doncaster, 1912	Norwich, 1911	Darlington, 1906
Ordinary . . .	5,410	4,540	3,300	4,885	6,610	6,870	7,050	6,890	7,528
Machinery . . .	5,710	4,200	1,290	2,935	3,405	3,065	3,125	3,005	2,718
Special . . . (Seeds, Models, etc.)	3,374	2,469	2,480	2,584	3,473	3,689	3,363	3,307	2,351
Total. . . (Exclusive of open ground space)	14,494	11,209	7,070	10,704	13,488	14,224	13,538	13,692	12,597
No. of Stands . . .	471	371	239	330	439	513	442	457	393

(1) Admissions by Payment at Darlington, 1920.

Day of Show	11 a.m.	1 p.m.	3 p.m.	5 p.m.	Day's total.
Tuesday (5s.) . . .	6,546	9,879	11,115	11,357	11,397
Wednesday (3s.) . . .	23,648	42,043	50,127	51,354	51,479
Thursday (3s.) . . .	29,398	46,065	51,838	52,538	52,626
Friday (2s.) . . .	20,485	32,230	38,983	40,308	40,389
Saturday (2s.) . . .	12,409	18,594	25,147	26,911	27,001
Total Admissions . . .					182,892

(2) *Total daily admissions at the 1920 Show, compared with the previous six Shows and the Darlington Show of 1895.*

Day of Show	Darlington, 1920	Cardiff, 1919	Manchester, 1918	Nottingham, 1915	Shrewsbury, 1914	Bristol, 1913	Doncaster, 1912	Darlington, 1895
First . . .	11,397	8,400	4,087	1,641	2,100	1,769	1,377	2,172
Second . . .	51,479	45,090	29,145	12,321	12,506	21,632	10,780	12,046
Third . . .	52,628	65,838	36,938	30,798	19,317	31,155	18,914	21,942
Fourth . . .	40,389	36,292	40,874	26,034	39,397	78,702	39,254	43,073
Fifth . . .	27,001	33,002	38,173	33,089	14,357	45,890	19,814	17,503
	182,892	191,694	149,197	103,883	87,803	170,148	90,139	100,316 <sup>1</sup>

<sup>1</sup> Including 574 admissions on Saturday (Implement Yard only).

watched the parades of animals in the Large Ring, where in the opinion of many there was the most splendid collection of animals ever seen at a Show. His Royal Highness attended the Luncheon in the Showyard given by the Mayor. In responding to the Royal toast proposed by the Mayor, His Royal Highness referred to the Darlington War Memorial, which was to be a hospital, and said the idea was a splendid one. Although there was a steady downpour of rain during the day there was a very large attendance of visitors. On Friday rain again fell, causing much disappointment and inconvenience to the large number of school children who attended. The Royal Pavilion was open to visitors on payment of threepence for admission, the proceeds being handed to the Darlington Hospital. On Saturday, the closing day of the Show, it was raining the greater part of the day.

As a whole the Show was perhaps the best that has been held by the Society, the horses being exceptionally good, while a finer show of cattle had not been seen for many years. Illustrations of the champion animals in this latter section accompany this report.

The sheep and pig sections were excellent, twenty-four breeds of the former being fully represented and the pigs more numerous than ever. Particulars as to entries, classes and prizes are given in the tables on pp. 138 and 139.

A noticeable feature was the exhibition of portraits and prints of early Shorthorn cattle, arranged and carried out by Mr. William Parlour, Prof. Douglas Gilchrist and Mr. F. Dallimore, the Corporation Librarian.

Interesting lectures on non-slipping horseshoes were given by Major Brennan de Vine, who explained that shoes and anti-slipping appliances which more nearly copied Nature were found to be the best and most useful types for use on horses for all surfaces. Despite the difficulties of transport the excellence of

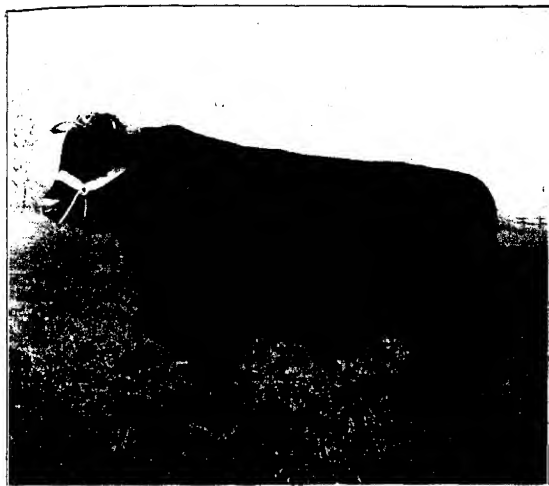


FIG. 1.—SHORTHORN BULL, "SAXQUHAR GRAND COURTIER."  
*Winner of Champion Prize for best Shorthorn Bull, Darlington, 1920.*  
*Exhibited by MR. OLIVER W. PORRITT.*



FIG. 2.—SHORTHORN COW, "BALMAVIE AUGUSTA 2ND"  
*Winner of Champion Prize for best Shorthorn Cow or Heifer, Darlington, 1920.*  
*Exhibited by MR. W. M. CAZALET.*

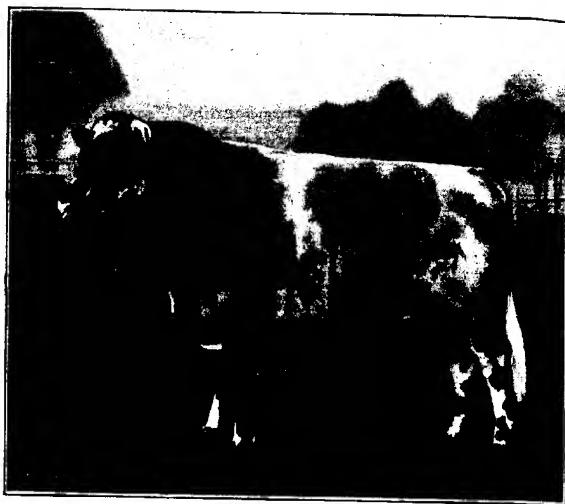


FIG. 3.—DAIRY SHORTHORN BULL, "BARHAM LORD PRICE."  
*Winner of Champion Prize for best Dairy Shorthorn Bull, Darlington, 1920.*  
*Exhibited by MR. ROBERT N. TORY.*



FIG. 4.—DAIRY SHORTHORN COW, "BARE CHARM."  
*Winner of Champion Prize for best Dairy Shorthorn Cow or Heifer, Darlington, 1920.*  
*Exhibited by THE DUKE OF WESTMINSTER, G.C.V.O., D.S.O.*

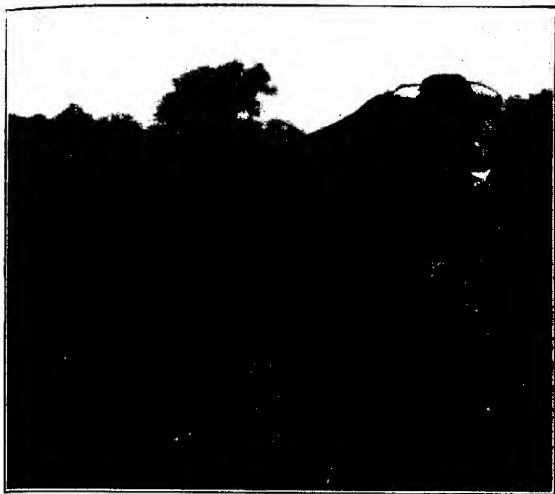


FIG. 5.—LINCOLNSHIRE RED SHORTHORN BULL, "RISBY DANDY."  
*Winner of Champion Prize for best Lincolnshire Red Shorthorn Bull, Darlington, 1920.*  
*Exhibited by MRS. M. M. WEBB AND SONS.*

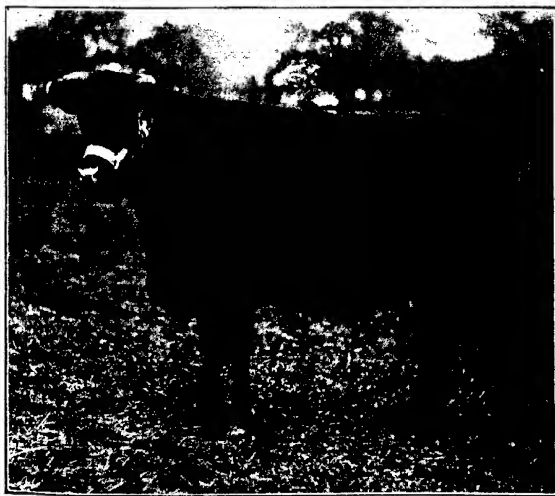


FIG. 6.—LINCOLNSHIRE RED SHORTHORN HEIFER, "FLAWBOROUGH NANCY."  
*Winner of Champion Prize for best Lincolnshire Red Shorthorn Cow or Heifer,*  
*Darlington, 1920.*  
*Exhibited by MAJOR H. COOPER.*



FIG. 7.—HEREFORD BULL, "RESOLUTE."  
*Winner of Champion Prize for best Hereford Bull, Darlington, 1920.*  
*Exhibited by MR. T. ROSE THOMPSON.*



FIG. 8.—HEREFORD COW, "GARLAND."  
*Winner of Champion Prize for best Hereford Cow or Heifer, Darlington, 1920.*  
*Exhibited by THE EARL OF COVENTRY.*



FIG. 9.—DEVON BULL, "CLAMPY GAY LADDIE."  
*Winner of Champion Prize for best Devon Bull, Darlington, 1920.*  
*Exhibited by H.R.H. THE PRINCE OF WALES, K.G.*



FIG. 10.—DEVON HEIFER, "HIGHFIELD BELLE 3RD."  
*Winner of Champion Prize for best Devon Cow or Heifer, Darlington, 1920.*  
*Exhibited by MR. CHARLES MORRIS.*



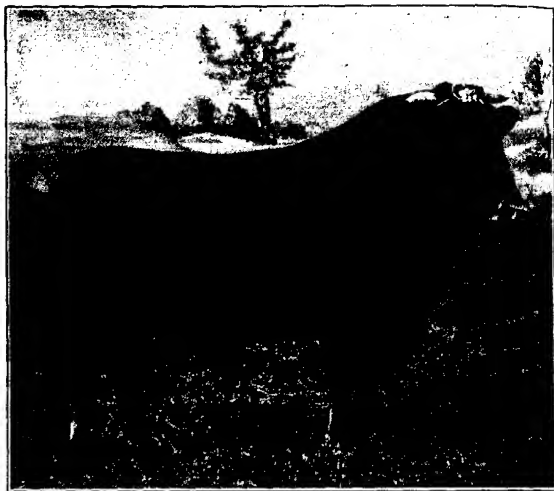


FIG. 11.—SOUTH DEVON BULL, "BOWDEN STRAWBERRY BOY."  
*Winner of Champion Prize for best South Devon animal, Darlington, 1920.*  
*Exhibited by MR. BEN LUSCOMBE.*

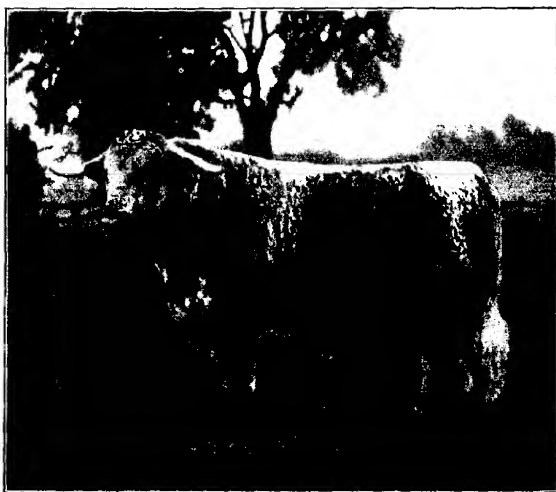


FIG. 12.—LONGHORN BULL, "WHITCOMB VENTURE 2ND."  
*Winner of Champion Prize for best Longhorn Bull or Cow, Darlington, 1920.*  
*Exhibited by MR. J. W. SWINNERTON-WESTON.*



FIG. 13.—LONGHORN HEIFER, "PUTLEY DIANTHUS 2ND."  
*Winner of Champion Prize for best Longhorn Bull or Heifer, Darlington, 1920.*  
*Exhibited by MESSRS. J. L. AND A. RILEY.*

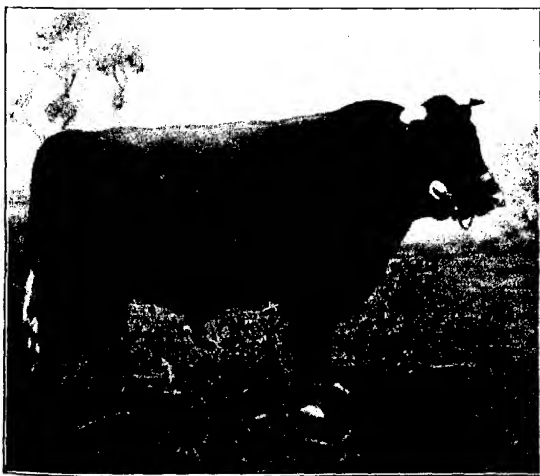


FIG. 14.—SUSSEX BULL, "BROWNSINGS MILLER 27TH."  
*Winner of Champion Prize for best Sussex Bull, Darlington, 1920.*  
*Exhibited by MR. GEORGE T. EATON.*



FIG. 15.—SUSSEX COW, "BROWNINGS STONESDOWN 1ST."  
*Winner of Champion Prize for best Sussex Cow or Heifer, Darlington, 1920.*  
*Exhibited by MR. GEORGE T. EATON.*



FIG. 16.—RED POLL BULL, "MARHAM DAUNTLESS."  
*Winner of Champion Prize for best Red Poll Bull, Darlington, 1920.*  
*Exhibited by MESSRS. THOMAS BROWN AND SON.*



FIG. 17.—RED POLL COW, "SHOTFORD LADY MARY."  
*Winner of Champion Prize for best Red Poll Cow or Heifer, Darlington, 1920.*  
*Exhibited by MR. J. B. DIMMOCK.*

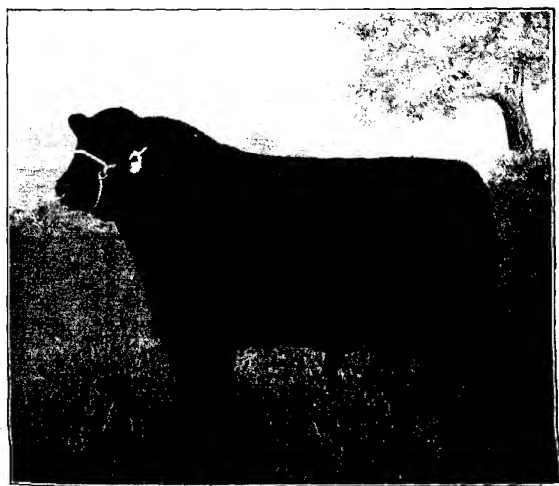


FIG. 18.—ABERDEEN ANGUS BULL, "ETRURIA OF BLEATON."  
*Winner of Champion Prize for best Aberdeen Angus animal, Darlington, 1920.*  
*Exhibited by MR. C. T. SCOTT.*



FIG. 19.—ABERDEEN ANGUS COW, "MENDOZA."  
*Winner of Champion Prize for best Aberdeen Angus Cow or Heifer, Darlington, 1920.*  
*Exhibited by MR. JAMES KENNEDY.*



FIG. 20.—GALLOWAY BULL, "JOVIAL OF BLACKCOMBE."  
*Winner of Champion Prize for best Galloway animal, Darlington, 1920.*  
*Exhibited by SIR ROBERT W. BUCHANAN-JARDINE, BART.*

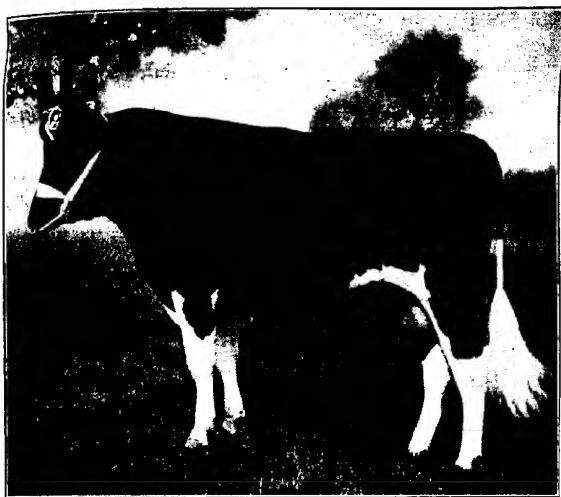


FIG. 21.—BRITISH FRIESIAN BULL, "BULKMEY KLASKE'S CERES."  
*Winner of Champion Prize for best British Friesian Bull, Darlington, 1920.*  
*Exhibited by MR. JAMES E. HUGHES.*

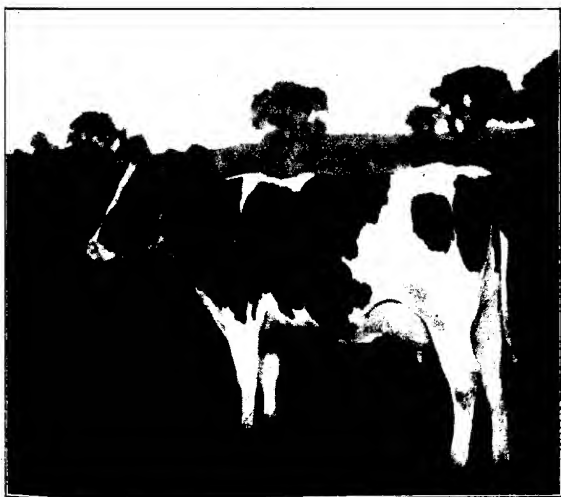


FIG. 22.—BRITISH FRIESIAN COW, "HEDGES DUTCH STARELY."  
*Winner of Champion Prize for best British Friesian Cow or Heifer, Darlington, 1920.*  
*Exhibited by MESSRS. A. AND J. BROWN.*



FIG. 23.—JERSEY BULL, "PIONEERS NOBLE."  
*Winner of Champion Prize for best Jersey Bull, Darlington, 1920.*  
*Exhibited by MAJOR THE HON. HAROLD PEARSON.*

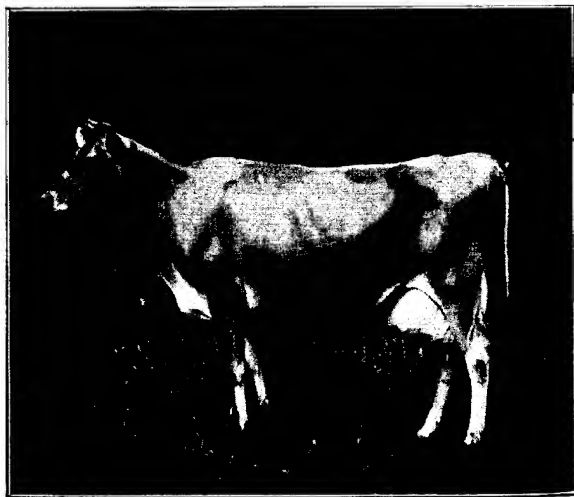


FIG. 24.—JERSEY COW, "DAIRYMAID."  
*Winner of Champion Prize for best Jersey Cow or Heifer, Darlington, 1920.*  
*Exhibited by MRS. EVELYN.*



FIG. 25.—GUERNSEY BULL, "HAMILL OF MARAZION."  
*Winner of Champion Prize for best Guernsey Bull, Darlington, 1920.*  
*Exhibited by MRS R. C. BAINBRIDGE.*



FIG. 26.—GUERNSEY COW, "BOSISTOW GOLDEN HEART."  
*Winner of Champion Prize for best Guernsey Cow or Heifer, Darlington, 1920.*  
*Exhibited by H.R.H. THE DUCHESS OF ALBANY.*







FIG. 27.—KERRY COW, "MINLEY MISTRESS."  
*Winner of Champion Prize for best Kerry animal, Darlington, 1920.*  
*Exhibited by CAPTAIN NELSON ZAMBRA.*



FIG. 28.—DEXTER BULL, "DOWNSFORD DANDY."  
*Winner of Champion Prize for best Dexter animal, Darlington, 1920.*  
*Exhibited by MR H. G. JONES.*



the Horticultural, Forestry and Education Sections was maintained.

Many exceptional difficulties arose in connection with the preparation of the Showyard, more particularly with regard to the labour, which caused the Honorary Director much anxiety, but with the assistance of the Mayor and the Town Clerk these troubles were surmounted and the Show, as usual, was complete on the opening day. The Show was held in conjunction with the Durham and the Yorkshire Agricultural Societies, who on this occasion withheld their own Shows, and this arrangement undoubtedly contributed to the successful exhibition. To the Darlington Corporation the Society's thanks are due for the great assistance they rendered from the time it was decided to hold the 1920 Show in their town, and more particularly to the Mayor, whose speeches at the various official functions showed that he had practical knowledge of the value of agriculture to his town, and also of the importance of the maintenance of the industry at the highest possible level in the interest of the nation.

The Local Committee made excellent arrangements for the Show, and Mr. Harry G. Steavenson was indefatigable in carrying out the duties of Local Honorary Secretary. His services in many difficult situations which arose will long be remembered by the Honorary Director and other officials with whom he acted. The Borough Surveyor (Mr. G. Winter) also had a great deal to do in connection with the preparation of the Showyard, and with his assistants cheerfully carried out the Society's requirements, including the laying of the gas and water mains, which in these days entails a great deal of responsibility as well as expenditure.

The North Eastern Railway Company dealt with the traffic to and from the Show in a most efficient manner, all grades of officials working splendidly to accomplish this end. The erection of the large dock and siding adjoining the Showyard directly connected with the main line resulted in the provision of transport facilities unequalled in the history of the Society's Shows.

The services rendered by the Honorary Director are always of an onerous character, but this year they were considerably added to by the many difficulties which arose, and which frequently required immediate settlement. Consequently, for several months the time of Sir Gilbert Greenall was almost wholly taken up with the business of the show, and the Society are more indebted to him on this occasion than they even have been in previous years.

In the various departments of the Show the Stewards cheerfully and capably carried out their duties during a most trying week.

THOMAS McROW.

## MISCELLANEOUS IMPLEMENTS EXHIBITED AT DARLINGTON SHOW.

THE entry in the Implement Section was large, exceeding that of Cardiff by 891, the total number of exhibits being 4,809.

There were but few actual novelties or implements representing new principles, but it was a very fine and interesting Show nevertheless.

### AWARDS OF SILVER MEDALS.

There were some 73 entries for the Society's Silver Medals, and the Judges awarded five medals to the exhibits here named :

No. in Catalogue.	Exhibitor.	Nature of Award.
596	DAIRY SUPPLY CO., LTD., Museum St. London, W.C.	Recording Thermometer.
1095	A. C. BAMLETT, LTD., Thirsk.	Potato Digger, "Bamlett."
2998	BAMFORDS, LTD., Leighton Works, Utttoxeter.	Iron Oil Engine, "The Bamford."
3364	N. V. MACHINEFABRIEK "DE POL," Zutphen, Holland.	Threshing Machine.
3370 & 3372	PHIPPS & SON, Chippenham.	Self-lift Arrangement applied to Plough or Cultivator.

The following is a detailed description of these exhibits:—

No. 596. *Recording Thermometer.* Dairy Supply Company, Ltd., Museum Street, London, W.C.1.

This is an ingenious and useful instrument designed to record

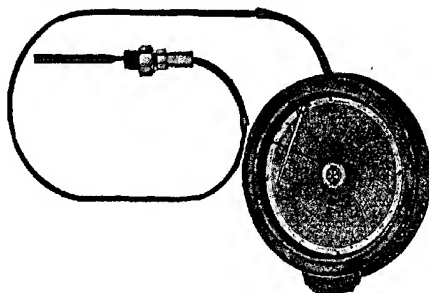


FIG. 1.—Recording Thermometer.

automatically on a revolving card dial the varying temperatures of any liquid or other substance with which the thermostatic bulb is placed in contact.

It consists of a tube containing mercury in continuation of which a flexible tube containing ether and ending in a fine

tube and flat hollow metal coil to which is attached the recorder needle or pen arm.

The heating of the mercury causes heating and expansion of the ether and a slight uncoiling or coiling of the hollow coil. The dial revolves by clockwork.

No. 1095. *The "Bamlett" Potato Digger.* A. C. Bamlett, Ltd., Thirsk, Yorks.

This machine embodies distinct improvements on earlier designs. The tines are actuated by a parallel link motion, and are placed outside and in rear of the revolving links. They are protected from breakage or damage by a safety relief.

The main drive is by chain, and the speed can be altered by the insertion of a larger or smaller sprocket; a clutch is provided for putting the machine in or out of gear.

It is a good, compact and well-made machine, and when tested by the Judges did its work satisfactorily. Weight  $7\frac{1}{2}$  cwt. Price £32.

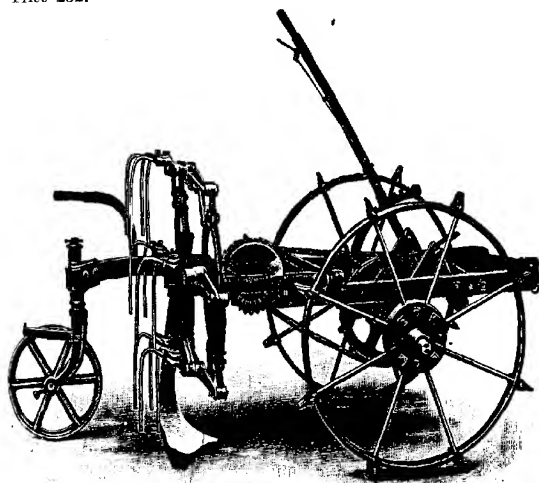


FIG. 2.—Potato Digger, "Bamlett."

No. 2998. *Oil Engine, "The Bamford."* Bamfords, Ltd., Leighton Iron Works, Utttoxeter.

This is a 5 h.p. engine. Starting with petrol, it runs on paraffin and is said to consume .75 pints per h.p. per hour. The construction is of peculiar simplicity and of exceptional strength.

The big end bearings are of white metal and are interchangeable, easily replaced in a very few minutes.

The valves are large and there is a very excellent arrangement for taking them out; this, too, can be done in a matter of a few seconds.

The Judges were impressed with the excellent design and simplicity of the engine.

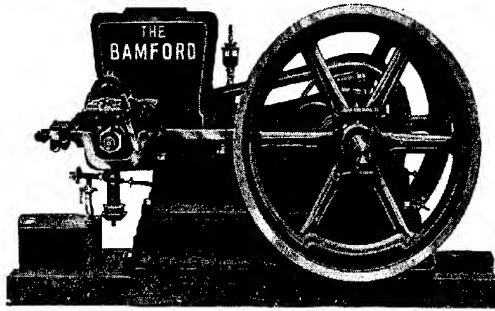


FIG. 3.—Oil Engine, "The Bamford."

No. 3364. *Threshing Machine.* N. V. Machinefabriek "De Pol," Zutphen, Holland.

This machine was exhibited at Cardiff and owing to its late

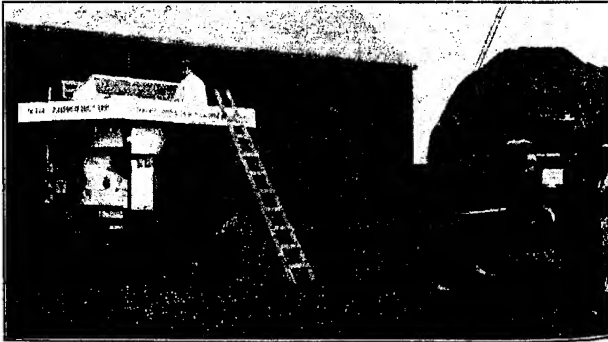


FIG. 4.—Threshing Machine, "Leo."

arrival through unavoidable delay the Judges recommended that permission be granted for it to be entered again this year.

The description of the machine given in last year's Report may be repeated:—

"This machine is of somewhat different type from those we are accustomed to see in this country, and for which is claimed 'simplicity' of design, few moving parts, small dimensions, low weight, high capacity and facility of transport.

"It has a 6 ft. 4 in. drum, but the machine is compact and smaller than other machines with shorter drums. Separation of the chaff is mainly effected by a fan driving air through a cylindrical trough in which the corn and chaff are energetically whirled up by a stirring shaft bearing arms and slanting blades, while a helical conveyor carries the grain in the opposite direction, delivering it to the riddles and awner, thence in two qualities to sacks."

The machine was put through a thorough trial in the fodder yard, where it threshed a quantity of wheat and also of oats. It was driven by a Saunderson Tractor, and its performance was excellent in every way.

It is a very compact and portable machine, notwithstanding that it has a large drum 6 ft. 4 in. in length and 18½ in. in diameter. Made in two sizes, it is claimed that the C or smaller machine requires an engine of 5 b.h.p., and the D or larger machine 6 b.h.p. The drum revolves at 1,200 revolutions per minute. The arrangement for the adjustment of the concaves is very convenient, each end being independent of the other.

The output claimed for the C machine is 25 to 40 bushels of oats per hour, and of the D machine 30 to 50 bushels of oats. The price, £250 for D and £200 for C, is a strong recommendation for a machine which is undoubtedly well and strongly made.

No. 3370. *Self-lift Arrangement applied to Plough or Cultivator.* Phipps & Son, Chippenham, Wilts.

After examining numerous self-lifting devices, the Judges came to the conclusion that while many others were excellent and showed much ingenuity in design, this had the all-important merit of simplicity in a marked degree both for raising, lowering and adjusting depth, being at the same time a strong well-made contrivance.

#### OTHER NEW IMPLEMENTS.

No. 268. "*Diabolo*" *Milk Cooler.* R. J. Fullwood & Bland, 31-35, Beviden Street, Hoxton, London, N.1.

Stated capacity 30 gallons per hour. Price £10.

This cooler is designed to protect the milk from contact with the air while being cooled. It consists of an iron casing in which rest a nest of shallow saucer-shaped bowls so arranged that while water flows through the inner part of these bowls the milk flows over their outside surfaces.



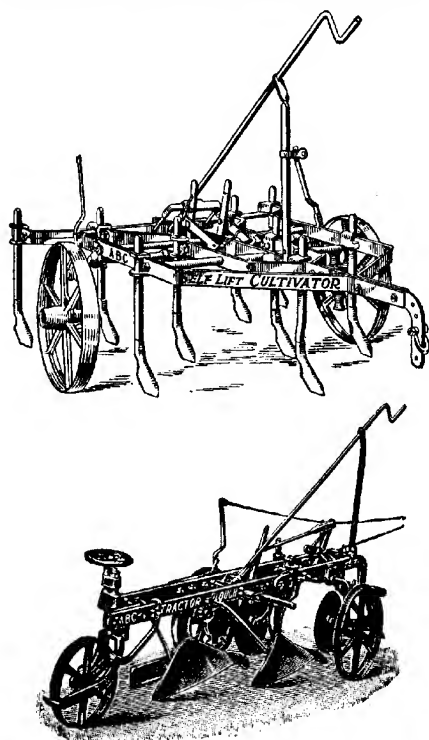


FIG. 5.—Self-lift Arrangement applied to Plough or Cultivator.

The joints between the several elements are made by rubber rings brought into close contact by means of a screw. The whole is closed in and is surmounted by a receiving vessel for the milk and a filter.

The cooler was tested in the Dairy, and there was no difficulty in reducing the temperature of the milk to that of the cooling water, the actual temperature of the milk being  $95^{\circ}$  and that of the water  $62^{\circ}$ .

Notwithstanding the advantage of the milk being protected during cooling, the fact that a certain quantity remains in the cooler which has to be emptied out and taken to pieces every time it is used, together with the fact that the several parts take some little time to clean, will, we fear, somewhat outweigh the

one important advantage it has over the ordinary and very simple corrugated cooler.

No. 538. *Cream Separator*, "Princess." Capacity 50 gallons, price £26 10s. Watson, Laidlaw & Co., Ltd., 98, Dundas Street (South), Glasgow.

This separator has two distinctive features—both of some practical merit. The first is in the flexible bearing for the spindle on which the separating bowl is hung. The bearing is formed of a double coil of stout Phosphor Bronze wire, possessing the necessary amount of flexibility and being lubricated by means of an oil-saturated felt pad; the coil is wound in the opposite direction to that in which the spindle rotates, thus minimising any possibility of seizing.

The other feature is that the separating plates each have three hollow studs projecting from their surfaces, by means of which all the plates are quickly and easily nested together in the hands and are placed over the central tube in one block without any special fitting on to the tube itself.

No. 597. *Temperature Controller*. Dairy Supply Co., Ltd., Museum Street, London, W.C.1.

This is another very useful automatic instrument working on the same principle as the Recording Thermometer above described.

In this case the flexible tube is connected to a metal capsule, which expands or contracts and in turn opens or closes a valve controlling a supply of compressed air from an independent source. This again actuates a diaphragm valve, thus opening or closing more or less a valve controlling a supply of a heating or cooling medium, i.e. of steam, brine or any heat-carrying or cooling liquid.

Thus any liquid, vapour or gas confined in a closed space can be kept at a uniform temperature.

No. 598. "Alfa Laval" *Combined Turbine Separator and Regenerative Pasteurizer*. Capacity 220 gallons per hour.

Though it presents nothing actually new, this is a very neat and compact plant.

No. 620. *Railway Milk Churn*, with "Hygienic" pattern neck and cover, and self-locking fastener. Price £4. T. Grayson, 16-17, Queen Street, Derby.

This churn has a plain and dustproof cover, and a small eccentric catch or fastener, which is a good improvement, but would be better if the catch could be replaced when worn by some more convenient means than unsoldering and soldering on a new one.

No. 655. *The "Revolt" Drain Excavator*. Price £50. South Lincolnshire Agricultural Engineering Co., Ltd., Spalding.

This is to all intents the same implement which was exhibited by a foreign firm in 1919 at Cardiff.

The Judges were invited to see the machine working in a field close to the Showyard.

It consists of a steel U-shaped cutter or share at the lower and forward end of an inclined conveyor.

An adjustable shoe in front of the cutter serves to regulate the thickness of the cut, which is 7 in. wide.

The elevator is driven by a combined cog and carrying-wheel which runs along the bottom of the drain.

The machine was drawn by a tractor and made very good work in a grass field with soft, moist and fairly tenacious soil. Cutting a trench to a uniform depth parallel with the surface of the ground is a simple matter, but to secure a uniform fall in the trench is not quite so easy, particularly if the surface of the ground be uneven. It struck the Judges as a rather crude way of meeting the difficulty for a man to be employed to stand on the machine and jump off whenever a hollow in the ground was met, so as to lighten the machine and reduce the depth of the cut.

Even if it were necessary, as undoubtedly it would be, to regulate the fall of the trench by the use of land tools, a vast amount of time would be saved in excavating the bulk of the trench by this mechanical means.

The machine is light and portable, yet apparently of ample strength, and the work it did was entirely satisfactory.

No. 671. *Ball Bearing Hub.* Skefko Ball Bearing Co., Ltd., Skefko Works, Luton, Beds.

The application of ball bearings to the wheels of farm wagons and other implements is a new departure, which, of course, greatly reduces the draught. Whether the additional cost, stated to be about £30 in the case of a farm wagon, can be shown to be a profitable investment remains to be proved.

No. 674. *Seed Dresser (Dossors Patents) new "Challenge Model."* Price £95. F. M. Dossor, St. Catherine's Works, Doncaster.

This machine has certain notable improvements on earlier models by the same maker.

The sieves receive regular vertical vibrations, and also an occasional sudden bump vertically; numerous brushes, too, not only help to keep the sieves clean, but considerably assist in separating the more difficult seeds, which are not only shaken but made to continually jump off the surface of the sieves. It was unfortunate that owing to the difficulty of arranging for the machine to be substantially erected and driven, the exhibitor was not able to show this very interesting machine working.

No. 695. *Root Crop Thinner or Singler.* Harold William Davey, Maesmynan Hall, Afonwen, Flintshire.

This is a novel piece of mechanism consisting of a double helix of sheet steel mounted on a central longitudinal shaft, carried between and driven by the travelling wheels of the implement. Stops or cutters are fixed between the helices which, as the machine travels along a row of small root plants and the helix revolves, cut out gaps, the length of which can be varied by adjustment provided for the purpose.

No. 702. *Watson Bottom Dumping Wagon.* S. Thornely Mott & Vines, Ltd., 11, Old Queen Street, Westminster, London, S.W.1.

This is, in fact, a two-wheeled cart, the bottom of which is formed of a pair of doors so arranged that the driver can discharge his load by pressing down a foot lever and, if necessary, without stopping his horses.

Another movement of the lever closes up the bottom ready for reloading.

A very useful and convenient cart.

No. 703. *Aero Block Machine.*

This is a compact machine for making hollow concrete blocks for building.

No. 754. *Lime Washing Machine.* Cooper, Pegler & Co., Ltd., 24 and 26, Christopher Street, Finsbury Square, London, E.C.2. (Manufactured by the Etablissements Vermorel, Villefranche, Rhone, France.)

This machine has a strong diaphragm pump and a good agitator with an air container giving a constant pressure and a steady spray; it is conveniently portable. The barrel can be readily detached from the shafts and carried by its side handles. Capacity,  $6\frac{1}{2}$  gallons. Weight 33 lb. Price £11.

No. 959. *Tractor Cultivator.* T. Collings, Bacton, Norfolk.

This cultivator has a self-lift actuated by a clutch on the axle; the clutch is of simple construction with a roller to save wear.

The depth regulator can be adjusted whilst in motion.

No. 1017. *Artificial Manure Distributor.* F. Walker & Sons, Drill Works, Bingham, Notts.

There is nothing original in the way in which the machine works, but it possesses an unusual and very desirable feature in that it can be dismantled in a remarkably short space of time, and that very conveniently, so that it is easily kept clean.

The machine was tested before the Judges with superphosphate and did its work satisfactorily.

No. 1025. *Turning Stetch-land Plough, 8 furrow, with steel Tye skifes and mould boards; shares, sleds and knife coulters arranged for cutting at one time four right-hand and four left-hand*

*furrows, say 9 in. wide.* John Fowler & Co. (Leeds), Ltd., Steam Plough and Locomotive Works, Leeds.

This is a fine implement with every desirable adjustment, well suited for the special purpose for which it is designed. Price £575.

No. 1479. *Trailer Car Hi-Speed.* Butler & Wilson, Ltd., 18-20, Hampstead Road, London, N.W.1.

Manufactured by Northway Hi-Speed Trailer Car Co., East Rochester, U.S.A.

This is a very useful four-wheel pneumatic-tyred vehicle which is self-steering, and can be attached to any make of motor car. Carries  $17\frac{1}{2}$  cwt. Weight 730 lb. Price £98 17s. 6d.

No. 1510. *Tractor Disc Plough.* The New Trafford Engineering Co., Ltd., 65, Conduit Street, London, W.1.

Manufactured by the Oliver Chilled Plow Works, Indiana, U.S.A.

This is a very good three disc self-lift tractor plough with exceptionally large discs.

No. 2094. *Combined Swath Turner, Tedder and Side Rake.* Blackstone & Co., Ltd., Rutland Engineering Works, Stamford.

This is the same implement as was exhibited and received a Silver Medal at Cardiff, but has been further improved. There are universal joints on the driving shafts of the swath turner, and the axle does not need to be expanded—it is 1 cwt. less in weight, and the price £26 5s.

No. 2136. *Self-lift Tractor Cultivator.* James & Frederick Howard, Ltd., Britannia Iron Works, Bedford.

A good implement with an original form of cam gear for self-lift and lowering. Price £50.

No. 2596. *Combined Side Delivery Rake, Swath Turner, Tedder and Windrower.* Martin's Cultivator Co., Ltd., Lincolnshire Iron Works, Stamford, Lincolnshire.

The feature of the implement is the ease and rapidity with which being (1) a swath turner it can be converted into (2) a side delivery rake and (3) into a tedder and windrower. Price £35 15s.

No. 2597. *Combined Side Delivery Rake and Swath Turner.*

A new design, the same in effect as 1 and 2 combined of No. 2596. Price £34 17s. 6d.

No. 2598. *Tractor Cultivator and Ridger, Martin's New Patent Self-lift Special.*

The self-lift is actuated by a chain and simple cam in a box.

A slot about 3 inches long in a connecting rod or link allows the tines some little latitude in lifting over stones, &c., and so prevents the wheels lifting at the same time, and so delaying action of lifter.

No. 2599. *Tractor Plough, Martin's New Patent Self-lift.*

The self-lift is driven off the furrow wheel—can be used for two or three furrows as desired.

No. 2750. *An Electric Light and Power Plant.* Manufactured by Alamo Farm Light Co., Alamo Electric, Ltd., 36, Grosvenor Gardens, London, S.W.1.

This consists of a rotating sleeve valve engine and dynamo mounted on a common base plate with radiator and switch-board. The engine is automatically stopped if water or oil are too low, and when batteries are charged. The throttle valve is also automatically closed by a solenoid if the engine should race, due to the taking off of load. Price £170.

No. 2751. *Cultivator, Self-lifting for Tractor or Horse Power.* McBain Brothers, Ltd., Castle Engineering Works, Tweedmouth, Berwick-on-Tweed.

A feature of the implement is that the pull of the tractor takes on below the axle of the wheels, and thus keeps the tines down in the ground. The tines are made to fold right back to prevent damage on meeting a rock.

No. 2757. *Grubber, with Automatic Lift for Tractor Work.* The Saunderson Tractor and Implement Co., Ltd., Elstow Engineering Works, Bedford.

A strong, well-made implement, with a well-designed self-lifting arrangement.

No. 2758. *Plough with Self-lift for Tractor and convertible for 2, 3 or 4 Furrow Work.*

The self-lift mechanism is somewhat different from that on the grubber, but is also cleverly worked out, and the plough itself is a good well-made implement.

No. 2907. *Water Elevator, Chain Helix Patent, Hand and Power Driven.* Boulton & Paul, Ltd., Norwich.

In the words of the makers this is "An ingenious invention simple and practical." It consists of an endless ordinary wrought iron chain, surrounded by a double galvanised wire helix; the chain hangs in the well or other receptacle for the fluid which it is desired to raise, and a wheel-shaped counterweight rests in the loop of the chain to keep it steady. The upper loop of the chain hangs over a pulley covered in by an iron case with a spout. On the pulley being revolved by hand or mechanical power the ascending side of the chain and helix travels up full of water which, owing to the combined effect of the forces of capillary attraction, friction and impetus, travels in the chain until it is thrown out by centrifugal force as the chain passes over the upper pulley.

The elevator is applicable for raising not only water but sludge, oil or other liquids.

No. 3329. *Three-furrow Tractor Plough, patent Self-lift.* E. and H. Roberts, Ltd., Deanshanger Ironworks, Stony Stratford, Bucks.

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Adjustable from 7 to 13 in. in width of furrow, this is a strong, well-made plough, with convenient and ample adjustments, though perhaps rather complicated.

No. 3365. *Grinding Machine for Mower Knives.* N. V. Machinefabriek "De Pol," Zutphen, Holland.

A very useful and handy grindstone, mounted on an iron stand with water trough. There is a carrier to which the knives are clamped and which rocks up and down as the stone is revolved, thus automatically grinding the full length of the blades equally. Only one man is required to work it.

Nos. 3370, 3371 and 3372. *Tractor Plough (2-furrow), Tractor Skim or Paring Plough, and Tractor Self-lift Cultivator.* Phipps & Son, Art Ironworks, Chippenham, Wilts.

These implements have already been referred to, and a Silver Medal is awarded to the self-lift arrangement.

The three implements are all one-man outfits operated by a cord from the tractor driver's seat. Having ample adjustments which are readily made, the machines have much to commend them in sound construction and simplicity.

No. 3595. *Grist Mill, The "Seamac."* South of England Agricultural Machinery Co., Ltd., 4, King Street, Cheapside, London, E.C.2. and Barden Road, Tonbridge.

This is a handy little mill, suitable for stock, poultry and domestic use, requires  $1\frac{1}{2}$  h.p., or can be used by hand.

The two "unbreakable" steel plates which take all the wear can be replaced for 8s. 6d.

No. 3596. *Pulley, The "Seamac" Patent.*

This is an adjustable pulley with an independent split boss easily fixed to any shaft from  $1\frac{3}{16}$  to 3 in. diameter.

No. 3740. *Ensilage or Straw Cutter and Blower, Massey Harris' "Blizzard."* Massey-Harris, Ltd., 53-55, Bunhill Row, London, E.C.1.

This is a large and powerful blower on to the disc of which are attached the knives for cutting the ensilage or chaff. Stated to cut and elevate to silo 12 to 15 tons of ensilage per hour, and to require 12 to 15 h.p. for ensilage, and 10 h.p. for chaff.

No. 3913. *Plough, The "Pidsea."* Manufactured by The Holderness Plough Co., Ltd., Burton Pidsea, Hull; Engineering Depôts, Ltd., Market Street, York.

This is a plough specially designed to follow automatically the shape of the land, and to give even depth of furrow. Especially applicable to ridge-and-furrow land.

No. 3943. *Pump, Feuerheerd.* Feuerheerd's Rotors (British Empire) Ltd., New Bridge Street House, 31, New Bridge Street, London, E.C.

A full description of the pump was given in last year's Report. It was unfortunate that as this very ingenious and efficient pump

was exhibited last year it was not eligible for the award of a Silver Medal on this occasion.

Nos. 3969 and 3970. *Tipping Wagons, "Vulcan."* The Vulcan Motor and Engineering Co. (1906) Ltd., Crossens, Southport, Lancashire.

These are powerful motor wagons, 20 h.p., with driver's canopy and cab, 30 cwt. chassis, and fitted with Bromilow & Edwards' hydraulic tipping gear, a simple and convenient means of tipping the wagon.

No. 4000. *Oil Motor Windlasses, McLaren's Patent.* J. & H. McLaren, Ltd., Midland Engine Works, Leeds.

These are internal combustion engines for ploughing on the cable system.

Works a 4-furrow plough, and has about  $\frac{1}{2}$  in. the power of the large steam ploughing engines; they weigh 3 tons each. The engines are 4-cylinder Dorman, 32 h.p., starting on petrol and running on paraffin.

Price of complete set with plough and cultivator, £2,636.

No. 4016. *Motor Tipping Wagon, 4 tons.* Walker Brothers (Wigan), Ltd., Pagefield Ironworks, Wigan, Lancashire.

A 40 h.p. motor wagon, fitted with Pagefield patent tipping gear. This is a powerful screw device actuated by the engine and operated by the driver alone.

No. 4024. *Cultivator, Self-lift, for Motor Traction.* W. N. Nicholson & Sons, Ltd., Trent Iron Works, Newark-on-Trent.

This implement has a neat and simple means of lifting and lowering which can be fitted to the makers' standard machines of several years past.

No. 4025. *Cultivator, Self-lift for Horse Draught.*

A very similar implement to the above, with neat mechanism; both wheels can be set for different depths.

No. 4510. *Silo, Creosoted Stave Norfolk.* Jewson & Sons, Ltd., Norwich.

This firm exhibited a fine cylindrical silo of creosoted timber construction. Conveniently arranged for filling and emptying, together with a cutter and blower, the "Monarch," mounted on a steel truck.

No. 4599. *Concrete Block Machinery, the "Manelite."* Charles James Mannell, Petra Place, Poole Hill, Bournemouth West, Hants.

This is a compact and convenient machine which can be easily worked by either hydraulic or hand power.

The sides of the box are movable, and the bottom pieces are changeable, so that blocks of different sizes and shapes can be made.

No. 4623 to 4628. *Concrete Block-making Machines.* Winget, Ltd., 24, Grosvenor Gardens, Westminster, S.W.1.



This exhibit comprised several excellent machines for making blocks, roofing tiles, pipes, &c., or for contingent purposes. The chain-spade mixer has a hopper to hold three cubic ft.; it is filled with the aggregate, and a shovel (of given capacity) full of cement is added; it is mixed first dry and then wet within one minute.

No. 4802. *Legging (Poethlyn)*. Edward Penton & Son, 1-11, Mortimer Street, London, W.1.

An unusual entry as an agricultural implement! This legging appears, nevertheless, to be of excellent design.

Made in pigskin, or other leather or box cloth or canvas, the wide band which wraps round the ankle adds greatly to the waterproof qualities of the legging, which is at the same time very neat and smart.

#### MISCELLANEOUS EXHIBITS.

No. 4633. *Concrete*. Concrete Utilities Bureau, 35, Great St. Helens, London, E.C.3.

As at Cardiff this Company had a very fine and interesting exhibit where the process of concrete block making and the erections of concrete structures could be seen in progress.

A convenient arrangement, too, was the grouping of all other exhibits of machinery for concrete mixing, block making, &c., around the large structure of the Concrete Utilities Bureau, whereby the study of the several machines and the collecting of information was greatly facilitated.

No. 4806. *Liquids Lift or Chain Pump*. Liquids Lifts, Ltd., 47, Victoria Street, London, S.W.1.

This is another pump of the endless chain variety, but in this case the chain is composed of short lengths of helical wire joined together horizontally by rods which pass through the coils of adjoining sections. It can be worked by hand or any mechanical power, and is said to be capable of being applied to the lifting of large quantities of water or other liquids to great heights, as well as for so small a matter as the bailing out of a rowing boat.

In conclusion it may again be stated that there were numerous other very fine exhibits of great interest which it is beyond the scope of the Report to allude to in detail.

The Judges desire once more to record their thanks to the Stewards of Implements, the Hon. J. E. Cross and Mr. U. Roland Burke, for all they did to facilitate their work, and also to the Society's Consulting Engineer, Mr. F. S. Courtney, for the generous and invaluable help constantly placed at their disposal.

WALTER L. BOURKE.

Monyerower,  
Maidenhead.

## REPORT OF THE STEWARD OF DAIRYING, DARLINGTON SHOW, 1920.

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### MILK YIELD TRIALS (CATTLE, CLASSES 241 to 253.)

OUT of a total entry of 156 cows, 118 competed in these trials, this being the largest number of cattle entered and tested in any previous Show of the Society.

It is satisfactory to be able to record the fact that only two animals were disqualified for giving milk showing less than 3 per cent. fat on the average of the two milkings, although if the fat percentage had been taken on each milking 27 cows would have been ruled out.

The points on which the awards were made were the same as at the Cardiff Show.

The three Champion Prizes generously given by a Society interested in the production of milk were awarded as follows :—

*A.—For Cows of the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian breeds.*

Champion Prize, 30*l.*—1002 J. M. Strickland's Dairy Shorthorn, Keyingham Dairy Maid 5th.

Reserve Number, 5*l.*—1588 W. Grainger's British Friesian, Eske Violet.

*B.—For Cows of the Ayrshire, Jersey and Guernsey breeds.*

Champion Prize, 20*l.*—1673 W. M. Cazalet's Jersey, Fairlawne Hussy.

Reserve Number, 5*l.* 1541 W. Gibson's Ayrshire, Moorside Acacia.

*C.—For Cows of the Kerry and Dexter breeds.*

Champion Prize, 10*l.*—1814 Capt. Nelson Zambra's Kerry, Minley Mistress.

Reserve Number, 5*l.*—1817 A. C. King's Dexter, La Mancha Madeline.

Table I. gives the full particulars and details of the trials, with the prizes won in each class.

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920.

No. in class	Exhibitor	Name of cow	Date of birth	Date of last calving	No. of milk yield in 24 hours	Date of last service	Average		Points		Awards		
							Total milk yield in 24 hours	Per cent. fat	Per cent. lactation	Total			
							Lb. oz.		X				
Class 241													
981	Major G. J. Buxton	Shortorns	Apr. 7, 1911	June 13, 1920	18	—	57 7	435	57.12	17.80	NH	74.92	H.C.
982	G. Harrison	Lady Teal 2nd	Mar. 4, 1912	May 7, 1920	65	—	47 8	345	47.50	15.50	NH	64.80	H.C.
983	R. V. Hobbs & Sons	Grudwell 32nd	Nov. 4, 1912	Apr. 23, 1920	69	—	37 8	347	37.75	12.88	NH	57.25	H.C.
984	R. L. Mond	Marchioness of Barrington 3rd	Nov. 25, 1912	Mar. 11, 1920	112	June 1, 1920	53 12	347	53.75	12.88	NH	69.63	H.C.
985	R. E. Campbell	Marchioness of Barrington 3rd	Jan. 16, 1910	May 31, 1920	31	—	58 12	440	58.75	17.90	NH	66.35	H.C.
986	Olympic Agricultural Co. Ltd.	Bright Aster	Jan. 10, 1910	May 31, 1920	31	—	58 12	440	58.75	17.90	NH	66.35	H.C.
1001	O. & E. Stephenson Ltd.	Rosannah 6th	Dec. 10, 1911	May 18, 1920	44	—	65 14	385	65.25	15.40	40	81.67	2nd Prize.
1002	L. M. Strickland	Kyringham Dairy Maid 3rd	Jan. 2, 1913	June 9, 1920	33	—	62 6	355	62.37	13.48	NH	82.10	1st Prize & Champion
1003	The Duke of Westminster	Bare Charm	Nov. 24, 1913	June 9, 1920	22	—	63 6	355	63.37	13.48	NH	76.17	H.C.
1004	The Duke of Westminster	Cressida 47th	Apr. 6, 1912	May 22, 1920	40	—	54 12	307	54.75	15.68	NH	70.63	H.C.
1009	The Duke of Westminster	Marjorie Grey	May 12, 1912	May 20, 1920	33	—	56 6	352	56.37	14.08	NH	70.45	H.C.
1010	John A. Willis	Carlton Queen 7th	Apr. 15, 1912	June 5, 1920	25	—	63 4	439	63.21	17.28	NH	80.73	3rd Prize.
1011	Capt. A. S. Willis	Duchess of Cornwall 3rd	Sept. 2, 1914	May 23, 1920	39	—	51 0	417	51.00	16.68	NH	75.96	H.C.
1012	P. Egan	Johnny Red 18th	May 27, 1914	May 23, 1920	39	—	51 0	417	51.00	16.68	NH	75.96	H.C.
1013	R. W. Hobbs & Sons	Roseleaf 2nd	May 27, 1914	May 23, 1920	35	—	58 12	437	58.75	17.88	NH	71.68	H.C.
1014	R. W. Hobbs & Sons	Rose 6th	May 27, 1914	May 23, 1920	37	—	58 12	437	58.75	17.88	NH	71.68	H.C.
1015	R. W. Hobbs & Sons	Waterbrook 2nd	July 15, 1915	June 11, 1920	49	—	47 4	370	47.25	15.60	29.60	63.75	H.C.
1016	J. Moffat	Fairy Duchess 18th	Nov. 14, 1914	May 23, 1920	39	—	47 0	412	47.00	16.48	NH	63.48	H.C.
1017	F. H. Thornton	Thornby Comfort 2nd	Nov. 14, 1914	May 23, 1920	39	—	47 0	412	47.00	16.48	NH	63.48	H.C.
1018	Capt. A. S. Willis	Thornby Comfort 2nd	Nov. 14, 1914	May 23, 1920	39	—	47 0	412	47.00	16.48	NH	63.48	H.C.
1019	Capt. A. S. Willis	Thornby Comfort 2nd	Nov. 14, 1914	May 23, 1920	39	—	47 0	412	47.00	16.48	NH	63.48	H.C.
1020	Capt. A. S. Willis	Thornby Comfort 2nd	Nov. 14, 1914	May 23, 1920	39	—	47 0	412	47.00	16.48	NH	63.48	H.C.
1021	Capt. H. Fitzherbert	Yaldersley Red 4th	Oct. 21, 1914	May 14, 1920	17	—	50 0	380	50.00	16.48	NH	69.20	H.C.
1022	Wright	Chivers & Sons Ltd.	July 18, 1916	May 10, 1920	22	—	47 12	340	47.75	15.10	NH	63.35	H.C.
1023	Chivers & Sons Ltd.	River Meadow 14th	July 18, 1916	May 10, 1920	22	—	47 12	340	47.75	15.10	NH	63.35	H.C.
1024	The Earl of Derby	Knolly Waterloo 6th	Oct. 20, 1916	June 8, 1920	23	—	39 12	345	39.75	17.40	NH	67.55	H.C.
1025	R. W. Hobbs & Sons	Grace Darling	Aug. 23, 1916	Apr. 23, 1920	50	—	38 11	320	38.87	16.50	1.60	57.27	H.C.
1026	W. G. Miller	Grace Darling	Aug. 23, 1916	Apr. 23, 1920	50	—	38 11	320	38.87	16.50	1.60	57.27	H.C.
1027	W. G. Miller	Grace Darling	Aug. 23, 1916	Apr. 23, 1920	50	—	38 11	320	38.87	16.50	1.60	57.27	H.C.
1028	Alfred Palmer	Grange 5th	Sept. 25, 1916	May 4, 1920	58	—	45 6	450	45.37	14.48	NH	65.58	H.C.
1029	P. H. Thornton	White Rose	July 18, 1916	May 24, 1920	24	—	46 3	345	46.57	13.80	NH	62.67	H.C.
1030	P. H. Thornton	White Rose	July 18, 1916	May 24, 1920	24	—	46 3	345	46.57	13.80	NH	62.67	H.C.
Class 242													
1031	John Evans & Sons	Barrow Liberty 3rd	Oct. 4, 1913	May 13, 1920	28	—	37 12	310	37.50	12.90	NH	56.50	2nd Prize.
1032	John Evans & Sons	Barrow Liberty 3rd	Oct. 4, 1913	May 13, 1920	28	—	37 12	310	37.50	12.90	NH	56.50	2nd Prize.

No. in Catalogue	Exhibitor	Name of cow	Date of birth	Date of last calving	No. of milk	Date of last service	Total milk in 24 hours	Test per cent.	Milk	Points	Awards
<b>Class 243</b>		<i>Lehigh Red Stockings—cont.</i>									
1120	Oct. J. Gratton, M.P.	Lehigh Red Stocking	Jan. 24, 1916	May 31, 1920	31	June 21, 1920	43 0 382	65.00	15.28	NH	2nd Prize.
1121	A. Barber	Bertford Dairymaid	May 3, 1914	May 12, 1919	31	—	53 14 345	63.87	13.80	NH	R.C.
1122	S. Blundell	Bondish Marica 2nd.	Aug. 27, 1914	May 29, 1919	30	—	58 4 530	58.25	13.20	NH	H.C.
1123	S. Blundell	Bondish Molly 2nd.	Aug. 13, 1914	May 7, 1919	35	—	57 12 517	57.75	12.64	NH	H.C.
1124	John Evans & Son	Burton No. 44	May, 1914	May 14, 1919	48	—	48 4 387	49.25	15.84	NH	H.C.
1125	John Evans & Son	Burton Fillipall.	Jan. 31, 1912	May 27, 1919	35	—	68 4 552	68.25	15.68	NH	H.C.
1126	John Evans & Son	Burton Fillipall.	Mar. 28, 1912	May 27, 1919	37	—	72 4 580	72.25	11.20	NH	1st Prize.
1127	John Evans & Son	Albany Kirkham	March, 1911	June 4, 1919	31	—	39 8 335	39.50	15.10	30	Fat below Standard.
1130	Lt.-Col. Sir A. G. Weigall	Countess	March, 1914	May 21, 1919	41	—	28 0 577	28.00	23.08	40	—
1131	Lt.-Col. Sir A. G. Weigall	Countess	Sept. 4, 1917	May 18, 1919	44	—	47 2 425	47.12	17.00	NH	2nd Prize.
1132	A. Barber	Bertford Quality 2nd	—	—	—	—	54 2 402	54.12	16.08	50	1st Prize.
<b>Class 244</b>		<i>Suffragette Lecons</i>									
1253	W. G. Rusk	Wynford Fancy	Feb. 1, 1915	May 27, 1919	35	—	40 2 437	40.25	17.38	30	3rd Prize.
1254	John H. Chick	Wynford Floss	Oct. 8, 1914	May 18, 1919	41	—	33 2 363	33.12	14.48	30	—
1255	John H. Chick	Wynford Floss	May 23, 1914	May 21, 1919	41	—	32 8 430	32.50	17.20	340	55.19
1256	Wm. D. Chick	Compton Gutter 3rd	Dec. 13, 1914	Apr. 18, 1919	44	June 15, 1920	43 10 351	43.62	13.48	NH	R.N.
1257	Wm. D. Chick	Compton Gutter 3rd	Feb. 27, 1913	Apr. 22, 1919	42	—	33 8 347	33.30	13.88	80	H.C.
1258	R. A. Clarke & Sons	Lady 1st	May 27, 1913	Apr. 22, 1919	43	—	30 6 437	50.17	17.48	1200	79.85
1259	R. A. Clarke & Sons	Mad Royal	May 27, 1913	Apr. 22, 1919	43	—	40 5 410	40.31	16.40	NH	2nd Prize.
1261	A. T. Loran	Ottol	Mar. 6, 1914	May 14, 1919	43	—	47 6 437	47.37	16.68	130	65.23
<b>Class 245</b>		<i>South Devons</i>									
1281	John Oakley	Primrose 6th	Apr. 12, 1911	Jan. 16, 1919	30	Apr. 2, 1920	34 14 512	34.77	20.43	NH	55.45
1282	James Batty	Countess 6th	Jan. 1, 1915	June 1, 1919	30	—	47 6 437	47.37	16.68	130	65.23
<b>Class 246</b>		<i>Longhorns</i>									
1301	W. Hanson Slat.	Arden Chucroella	June 17, 1916	May 10, 1919	32	—	38 4 430	38.25	17.20	NH	55.45
1302	W. Hanson Slat.	Arden Chucroella	July 1, 1916	May 25, 1919	32	—	34 14 512	34.77	20.43	NH	55.45
1304	F. W. Swinerton	Arbury Rosebud	Apr. 21, 1915	June 8, 1919	23	—	38 4 430	38.25	17.20	NH	55.45
<b>Class 247</b>		<i>Red Polls</i>									
1382	Lt.-Col. R. C. Batt	Letton Mavis 3rd	June 14, 1912	Mar. 8, 1919	115	Apr. 28, 1920	38 4 430	38.25	17.20	NH	55.45
1383	Capt. H. Colmore	Dallinghoo Ruby 1st	Oct. 23, 1915	May 28, 1919	34	—	34 14 512	34.77	20.43	NH	55.45
1385	Capt. H. Colmore	Rendlesham Gentlewoman 2nd	Oct. 16, 1913	Feb. 5, 1919	147	June 14, 1920	38 4 430	38.25	17.20	NH	55.45

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920—continued.

No. in class	Exhibitor	Name of cow	Date of birth	Date of last calving	No. of milk milk	Date of last service	Total milk in 24 hours	Yield per cent.	Yield per cent. milk	Value of lactation	Awards
<i>Red Polls—continued</i>											
Class 247 1369	The Marchioness of Graham	Gressenhall Ross.	Dec. 21, 1914	May 21 1920	41	—	135 09	47	4	4 35	47 25 17 00 70 61 35 3rd Prize.
1390	Lord Hastings	Melton May	Sept. 30, 1914	Apr. 24 1920	68	June 11, 1920	38 50	8	4 30	38 50 46 90	2 90 H.C.
1391	Major J. A. Morrison	Kettleburgh Rosie 2nd	Nov. 20, 1913	Apr. 22 1920	70	—	47 12	532	47 12 12 28	3 00	H.C.
1393	Capt. A. Richardson	Kettleburgh Rosie 4th A1	Apr. 20, 1912	June 3 1920	23	—	60	8	3 40	60 50 13 00	N.I.
1394	Mr. J. W. Wilson	Kettleburgh Rosie 5th A1	July 19, 1912	June 3 1920	23	—	46 25	4	3 32	46 25 15 08	2 90 1st Prize.
1396	Joseph Watson	Gressenhall Molly	July 7, 1912	Dec. 19 1920	20	May 23, 1920	44	4	3 32	44 25 14 18	N.I.
<i>Ayrshires</i>											
Class 248 1541	Wm. Gibson	Moorside Atalia	Apr. 23, 1912	May 13 1920	49	—	56 12	435	46 75 17 40	90	75 05 1st Prize and Reserve for Champion.
1542	Wm. Gibson	Moorside Atalia 3rd	Aug. 3, 1914	May 21 1920	41	—	50 12	442	40 75 17 08	70	68 53 2nd Prize
1546	W. Murray	Kirkland Red Rose 4th	Nov. 12, 1913	June 4 1920	27	—	41	0	3 75	41 00 15 00	N.I.
<i>British Friesians</i>											
Class 249 1553	A. & J. Brown	Hedger's Dutch	Nov. 25, 1916	Jan. 16 1920	107	May 20, 1920	46	8	3 70	46 50 14 80	4 00 H.C.
1554	A. & J. Brown	Hedger's Dutch	Nov. 25, 1916	Jan. 16 1920	107	—	53	4	3 20	53 25 12 90	N.I.
1555	A. & J. Brown	Hedger's Dutch	Nov. 25, 1916	Jan. 16 1920	107	—	46	0	3 87	46 00 15 48	N.I.
1557	Eaton & Mungeridge	Kirkhill Lucy 2nd	Feb. 25, 1916	May 31 1920	31	—	68	12	3 90	68 75 15 60	N.I.
1558	Walter Granger	Eske Violet	Mar. 1, 1914	May 31 1920	31	—	67	4	3 92	67 25 11 68	1 20 3rd Prize and Reserve
1591	Olympia Agricultural Co., Ltd.	Colton Royal Rita	Apr. 7, 1912	May 16 1920	52	—	63	8	4 15	63 20 18 60	N.I.
1594	W. & R. Wallace	Dorsey Bulah	Feb. 13, 1915	June 6 1920	25	—	36	4	3 22	36 25 12 80	N.I.
1592	The Duke of Marl-	Haydon Beauty	Oct. 17, 1917	June 16 1920	15	—	33	0	3 20	33 00 12 90	6 90 H.C.
1594	James Russell	Teddoes Thistle 2nd	May 5, 1917	Mar. 20 1920	139	June 14, 1920	33	0	3 20	33 00 12 90	6 90 H.C.
1597	W. & R. Wallace	Knebworth Countess	June 23, 1917	Jan. 16 1920	167	Apr. 6, 1920	53	4	3 35	53 25 13 40	2 90 H.C.
1598	A. Weightman	Pomona Audrey	Nov. 7, 1917	Apr. 23 1920	66	—	53	4	3 35	53 25 13 40	2 90 H.C.
<i>Jerseys</i>											
Class 250 1668	Capt. C. B. Balfour	Blue Lily	Nov. 29, 1911	Oct. 27, 19 1920	248	Mar. 4, 1920	25	0	4 75	25 00 19 00	4 00 3rd Prize
1669	Capt. C. B. Balfour	Moona	Feb. 26, 1914	Mar. 15 1920	108	June 13, 1920	43	8	5 62	43 00 22 48	6 80 2nd Prize & Champion
1670	Mrs. Evelyn	Daikymad	June 13, 1913	May 13 1920	53	—	33	12	4 32	33 25 19 48	5 40 H.C.
1674	Mrs. Mcintosh	Sweet Rowe	June 1, 1912	May 9 1920	53	—	33	12	4 32	33 25 19 48	5 40 H.C.
1682	Wm. Mcintosh	Rymouth Lady	Aug. 25, 1912	May 9 1920	67	—	46	0	4 85	46 00 19 40	2 70 H.C.
1683	Wm. Mcintosh	Rymouth Lady	Aug. 25, 1912	May 9 1920	67	—	46	0	4 85	46 00 19 40	2 70 H.C.
1684	Wm. Mcintosh	Rymouth Lady	Aug. 25, 1912	May 9 1920	67	—	46	0	4 85	46 00 19 40	2 70 H.C.
1685	Wm. Mcintosh	Rymouth Lady	Aug. 25, 1912	May 9 1920	67	—	46	0	4 85	46 00 19 40	2 70 H.C.
1686	Wm. Mcintosh	Rymouth Lady	Aug. 25, 1912	May 9 1920	67	—	46	0	4 85	46 00 19 40	2 70 H.C.

No. in catalogue	Exhibitor	Name of cow	Date of birth	Date of last milking	No. of days milked	Date of last service	Average milk per cent.	Average milk per cent. × 1	Total milk lbs.	Total fat lbs.	Awards	
<i>Jersays—continued</i>												
Class 250	R. Bruce Ward	Resful 2nd	July 9, 1911	May 10	52	Mar. 12, 1920	35 8	3.85	35.90	15.40	1.20	52 10 H.C.
1891	Dr. H. Watney	Aurelia 1st	Nov. 22, 1910	Mar. 27	105	June 18, 1920	43 12	4.92	43.75	19.88	1.60	65 58 H.C.
1892	Dr. H. Watney	Sabin's Goose 2nd	Dec. 29, 1913	Apr. 8	84	June 14, 1920	43 8	5.47	43.64	21.88	4.90	68 23 H.C.
1893	Dr. H. Watney	Sabin's Maple	Oct. 10, 1912	Apr. 4	88	June 20, 1920	37 4	5.40	37.25	21.60	4.80	68 35 H.C.
1894	Dr. H. Watney	Tuckwing	Aug. 30, 1910	Apr. 29	73	—	39 12	4.35	43.45	20.60	3.20	67 10 H.C.
1895	Mrs. Edgar Watts	Quinnness	Apr. 4, 1917	Apr. 3	73	—	39 12	4.35	43.45	20.60	3.20	67 10 H.C.
1706	J. H. N. Roberts	Capor	Jan. 24, 1917	Apr. 3	89	June 20, 1920	44 8	3.95	40.75	14.60	4.90	64 90 H.C.
<i>Guernseys</i>												
Class 251	James W. Fell	Govern's Dairymaid	Jan. 18, 1913	Feb. 23	129	May 20, 1920	37 12	5.97	37.55	23.88	2.00	65 53 R.N.
1765	G. E. Perrand	Fussey's Dora	Mar. 28, 1914	Apr. 28	104	June 13, 1920	38 4	3.80	38.25	15.20	7.80	65 63 H.C.
1767	Mrs. C. E. Hombrö	Fanny du Foulon 2nd	July 3, 1911	May 16	49	—	46 0	4.70	46.00	15.40	4.00	65 00 H.C.
1770	Mrs. Jervoise	Donna 7th of Warren Wood	Jan. 24, 1913	May 14	49	—	40 4	5.72	40.25	22.68	7.80	65 93 2nd Prize.
1771	Mrs. W. Howard	Palmer	Apr. 9, 1914	May 8	54	—	30 0	3.90	30.00	15.60	1.40	47 60 —
1773	Blue Bell of Goodnestone	Blue Bell of Goodnestone	Feb. 23, 1916	June 5	26	—	49 8	3.87	49.57	19.48	5.30	64 98 1st Prize.
1775	LLR.H. The Duchess	Boislow Golden Heart	Mar. 20, 1916	Mar. 30	65	June 18, 1920	40 4	4.53	40.25	18.12	5.30	63 67 1st Prize.
1776	LLR.H. The Duchess	Basikow Victoria	Mar. 20, 1916	Apr. 27	65	—	34 12	3.75	34.75	15.60	2.50	62 95 H.C.
1783	G. Percy Sanday	Lisle's Mousette 9th	June 27, 1916	Apr. 27	65	—	34 12	3.75	34.75	15.60	2.50	62 95 H.C.
<i>Jerries</i>												
Class 252	L. Harrison & Co., Ltd.	Coquet Dabchick	May 17, 1914	June 13	18	—	39 0	3.90	39.00	14.40	N.I.	34 40 R.N.
1807	J. W. Towler	Gort Carly 2nd	May 14, 1915	Apr. 6	82	—	37 4	4.42	37.25	19.48	1.60	51 33 H.C.
1808	J. W. Towler	Wendland Dorothy	May 14, 1916	May 29	132	—	36 0	3.47	36.00	13.88	N.I.	50 18 2nd Prize.
1810	J. W. Towler	Wendland Daisy 2nd	Apr. 19, 1914	Feb. 25	127	—	36 0	3.47	36.00	13.88	N.I.	50 18 H.C.
1812	Capt. N. Zambra	Castledown Nina	Mar. 3, 1915	Apr. 4	88	—	38 12	3.75	38.75	15.20	4.80	57 75 2nd Prize.
1813	Capt. N. Zambra	Minkley Mistress	May 20	85	42	—	45 8	3.11	45.00	16.68	2.00	63 38 1st Prize & Champion
1814	Capt. N. Zambra	Minkley Mistress	May 20	85	42	—	45 8	3.11	45.00	16.68	2.00	63 38 1st Prize & Champion
<i>Dezires</i>												
Class 253	A. W. Bailey Hawkins	Stagerhoe Biddy	May, 1914	May 11	51	—	28 0	3.20	28.00	12.80	1.10	41 90 —
1843	A. C. King	Stagerhoe Biddy	May 16, 1914	May 11	51	—	28 0	3.20	28.00	12.80	1.10	41 90 —
1846	A. C. King	La Marcella Madeline	March, 1913	May 17	45	—	42 12	3.70	42.75	13.80	5.80	50 65 1st Prize and Reserve for Champion.
1847	A. C. King	La Marcella Madeline	March, 1913	May 17	45	—	42 12	3.70	42.75	13.80	5.80	50 65 2nd Prize.
1848	Mrs. H. J. Nutt	Barrow Bricelee 4th	Aug. 1, 1914	Apr. 6	83	—	37 8	4.10	37.20	16.40	4.30	42 20 —
1851	Mrs. H. J. Nutt	Phonkey Phoney 2nd	Mar. 10, 1914	Apr. 9	83	—	37 8	4.10	37.20	16.40	4.30	42 20 —
1852	Mrs. H. J. Nutt	Phonkey Phoney 1st	Mar. 10, 1914	June 9	82	—	31 8	3.15	31.50	12.60	N.I.	41 10 —

Table II. shows the average results of all the animals competing under their respective breeds.

TABLE II.—*Average Results of the Cattle in the Milk Yield Classes.*

No. of cows com- peting	Breed	Days in milk	Milk	Fat per cent.	Points
			Lb. oz.		
29	Shorthorn . . . . .	42	51 2 $\frac{3}{4}$	3.96	67.98
13	Lincolnshire Red Shorthorn .	54	68 13 $\frac{5}{8}$	3.69	70.00
9	Devon . . . . .	55	40 7 $\frac{1}{5}$	4.02	58.02
2	South Devon . . . . .	98	49 11	4.23	72.59
3	Longhorn . . . . .	27	40 2 $\frac{1}{2}$	4.53	58.24
9	Red Poll . . . . .	88	43 12	3.36	61.95
3	Ayrshire . . . . .	39	49 8	4.17	66.18
11	British Friesian . . . . .	63	51 4	3.52	67.63
17	Jersey . . . . .	105	40 1 $\frac{3}{4}$	4.89	66.13
9	Guernsey . . . . .	71	39 5 $\frac{1}{2}$	4.41	60.08
7	Kerry . . . . .	66	35 9 $\frac{1}{2}$	3.94	53.96
6	Dexter . . . . .	43	32 0	3.75	47.30

#### \* BUTTER TESTS (CLASSES 254 A & B & 255.)

The prizes given by the English Jersey Cattle Society and the Shorthorn Society attracted a record entry, 81 out of 111 cattle entered going through the competitions in the three classes.

The cows in Classes 254 A & B were weighed on Tuesday evening, June 29, and all the cattle were milked out on the following day at 5 p.m.

The points on which the prizes were awarded were the same as at Cardiff, but cows whose milk showed a ratio of over 30 lb. of milk to the 1 lb. of butter were precluded from taking a prize or commendation.

Table III. gives the full particulars of the trials with the prizes and awards, while Table IV. gives the averages of the various breeds.

It will be noticed that this year for the first time the average figures in the light and heavy weight classes are given in distinct tables so that a comparison of the value for butter production of the light and heavy weight cattle may be considered, it being a question which is the more economical animal when the extra amount of food is taken into consideration.

No. in Catalogue	Exhibitor	Name of cow	Breed	Date of birth	Date of calf	No. of days in milk	Date of service	Milk yield in 24 hours	Butter yield	Colour	Quality	No. of quarts for period of lactation	Total No. of pounds	Awards	CHURNING TABLE			
															Prepared	Finished	Time	Temperature, F.
996	R. L. Moud	Cornwell Milky	Shorthorn	Nov. 25, '12	Mar. 11, '12	112	1909	10.6	1.0	Light	Pair	25.00	5.00	.....	9	42	10	56
1000	J. A. Wylie	Wilton	Shorthorn	Nov. 25, '12	June 5, '12	25	...	63	1.1	V. Good	V. Good	14.00	14.00	H. Commended	10	25	10	56
1009	Capt. A. S. Willis	Blackburn	Shorthorn	Oct. 2, '08	June 5, '12	25	...	63	1.1	V. Good	V. Good	14.00	14.00	H. Commended	10	25	10	56
1010	W. G. Miller	Waverock 2nd	Shorthorn	Feb. 18, '14	April 25, '14	35	...	47	0.1	White	Good	24.75	24.75	.....	10	20	10	54
1019	J. Moffat	Waverock 2nd	Shorthorn	July 15, '16	June 11, '20	20	...	47	0.1	White	Good	24.75	24.75	.....	10	20	10	54
1020	Capt. A. S. Willis	Waverock 2nd	Shorthorn	June 2, '16	May 24, '20	38	...	62	0.1	White	Good	24.75	24.75	.....	11	13	20	57
1027	Capt. A. S. Willis	Waverock 2nd	Shorthorn	Sept. 11, '14	May 14, '16	46	...	47	10.1	White	Good	24.75	24.75	.....	11	17	18	56
1028	Capt. H. Wright	Waverock 2nd	Shorthorn	Oct. 21, '14	June 14, '17	47	...	47	12.1	White	Good	24.75	24.75	.....	11	22	11	56
1038	A. Palmer	Waverock 2nd	Shorthorn	Sept. 22, '16	May 4, '18	58	...	45	6.1	White	Good	24.75	24.75	.....	11	21	11	56
1049	F. H. S. Perkins	Waverock 2nd	Shorthorn	Oct. 5, '16	June 8, '20	25	...	51	0.1	White	Good	24.75	24.75	.....	11	40	11	56
1112	John Evans & Son	Waverock 2nd	Shorthorn	Oct. 6, '11	May 4, '18	58	...	57	12.1	White	Good	24.75	24.75	.....	11	52	12	58
1116	Col. J. Gretton	Waverock 2nd	Shorthorn	April 14, '13	May 19, '18	43	...	57	12.1	White	Good	24.75	24.75	.....	12	61	13	57
1117	Col. J. Gretton	Waverock 2nd	Shorthorn	Jan. 26, '16	May 31, '21	41	...	55	0.1	White	Good	24.75	24.75	.....	12	61	13	57
1120	A. Barber	Waverock 2nd	Shorthorn	May 3, '14	April 12, '20	80	June 21	57	14.1	White	Good	24.75	24.75	.....	12	61	13	57
1125	S. Blandell	Waverock 2nd	Shorthorn	Aug. 27, '14	May 26, '20	26	...	58	0.1	White	Good	24.75	24.75	.....	12	61	13	57
1125	S. Blandell	Waverock 2nd	Shorthorn	June 11, '11	May 27, '23	33	...	58	4.2	White	Good	24.75	24.75	.....	12	61	13	57
1124	S. Blandell	Waverock 2nd	Shorthorn	Aug. 16, '14	May 7, '25	35	...	57	12.1	White	Good	24.75	24.75	.....	12	61	13	57
1125	John Evans & Son	Waverock 2nd	Shorthorn	May 19, '14	May 14, '18	48	...	40	4.1	White	Good	24.75	24.75	.....	12	61	13	57
1126	John Evans & Son	Waverock 2nd	Shorthorn	Jan. 1, '12	May 27, '23	33	...	50	2.0	White	Good	24.75	24.75	.....	12	61	13	57
1127	John Evans & Son	Waverock 2nd	Shorthorn	April 24, '13	May 21, '18	44	...	58	4.1	White	Good	24.75	24.75	.....	12	61	13	57
1128	A. Barber	Waverock 2nd	Shorthorn	Sept. 4, '17	May 15, '21	44	...	29	0.1	White	Good	24.75	24.75	.....	12	61	13	57
1231	W. G. Bask	Waverock 2nd	Shorthorn	Feb. 1, '13	May 27, '25	35	...	47	2.1	White	Good	24.75	24.75	.....	12	61	13	57
1252	W. G. Bask	Waverock 2nd	Shorthorn	Oct. 8, '14	May 21, '15	115	...	45	2.1	White	Good	24.75	24.75	.....	12	61	13	57
1253	John H. Chick	Waverock 2nd	Shorthorn	July 23, '13	May 21, '14	41	...	45	2.1	White	Good	24.75	24.75	.....	12	61	13	57
1255	W. D. Chick	Waverock 2nd	Shorthorn	Dec. 13, '14	April 18, '18	24	June 19	23	8.1	White	Good	24.75	24.75	.....	12	61	13	57
1257	W. D. Chick	Waverock 2nd	Shorthorn	Dec. 13, '14	April 18, '18	24	June 19	23	8.1	White	Good	24.75	24.75	.....	12	61	13	57

\* The "Butter Ratio" represents the number of lbs. of milk required to make 1 lb. of butter. Ten lbs. of milk are reckoned as equal to an imperial gallon.





TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920—continued.  
CLASS 234 L.—COWS NOT EXCEEDING 900 LB. LIVE WEIGHT.

No. in Catalogue	Exhibitor	Name of cow	Breed	Live weight	Date of Birth	Date of last calf	No. of days in milk	Date of last service	Milk yield in 24 hours	Butter yield	Butter Ratio	Colour and quality of butter.		No. of points for butter	No. of points for period of lactation	Total No. of points	Awards	CHURNING TABLE			
												Colour	Quality					Returned	Finished	Unfinished	Time taken, hours & minutes
1671	Mrs. Fred J. Bicknell	Edinburgh	Jersey	508	June 1, 1912	Mar. 29, 1920	24	June 19	30 12	1 14	20.0	Good	Good	31.25	5.00	36.25	3rd Prize	12	18 12	33	15
1672	Mrs. B. B. Lucas	Concord 14th	Jersey	508	June 1, 1912	Mar. 29, 1920	24	June 19	30 12	1 14	20.0	Good	Good	31.25	5.00	36.25	3rd Prize	12	18 12	33	15
1682	Major Hon. H. H. Bicknell	Phmouth Lady	Jersey	508	May 31, 1916	April 25, 1920	57	June 24	46 0	2 22	21.23	V. Good	V. Good	32.50	2.70	35.20	2nd Prize	12	21 12	45	24
1686	Mrs. Ruel	Meadow Vale	Jersey	806	Apr. 1, 1913	Mar. 24, 1920	89	June 24	44 12	2 03	21.56	Good	V. Good	27.75	5.00	32.75	1st Prize	12	21 12	45	24
1766	J. H. N. Roberts	Quail	Jersey	728	Apr. 5, 1912	Apr. 15, 1920	72	June 24	29 12	1 53	18.05	Good	Good	19.75	3.50	23.25	...	11	15 11	40	25
1718	Mrs. Jerome	Auditt 2nd	Jersey	663	May 30, 1918	May 18, 1920	44	June 24	27 12	1 53	18.05	Good	Good	19.75	3.50	23.25	...	11	15 11	40	25
1738	G. F. Sauty	Laurel Monticello	Guernsey	847	June 27, 1916	April 27, 1920	65	June 24	34 12	1 41	27.46	Excellent	V. Good	20.75	2.70	23.45	...	9	26 10	18	27
1807	L. Harrison & Co.	Connet Dabellick	Kerry	868	May 17, 1914	June 13, 1920	18	June 24	39 0	1 42	24.00	Fair	Fair	20.75	NH	20.75	...	9	25 10	35	41
1822	J. W. Topley	Gort Ferry 2nd	Kerry	596	May 14, 1915	April 6, 1920	89	June 24	39 4	1 62	23.27	Fair	Fair	20.75	4.50	25.25	...	9	25 10	35	41
1812	J. W. Topley	Wort Ingham 8th	Kerry	770	Mar. 10, 1912	April 23, 1920	72	June 24	33 6	1 124	18.82	Good	Good	24.25	3.20	27.45	...	9	26 10	35	41
1817	J. W. Topley	2nd O'Connell	Kerry	638	Apr. 15, 1914	Feb. 23, 1920	127	May 24	35 4	1 08	25.82	White	White	16.50	5.70	22.20	...	9	26 10	35	41
1854	J. W. Topley	Widd Trant 4th	Kerry	828	Mar. 26, 1918	June 5, 1920	26	June 24	14 12	0 94	23.84	White	White	19.25	NH	19.25	...	9	26 10	35	41
1881	Mrs. H. J. Nuel	Widd Trant 4th	Kerry	700	Mar. 26, 1918	May 25, 1920	26	June 24	32 12	1 41	25.96	Fair	Fair	20.75	NH	20.75	...	9	26 10	35	41

1 The "Butter Ratio" represents the number of lb. of milk required to make 1 lb. of butter. Ten lb. of milk are reckoned as equal to an imperial gallon.

TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920.  
CLASS 253.—DAIRY SHORTHORN COWS OR HELPERS.

[illegible]

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

TABLE IV.—Average Results of the Cattle in the Butter Test Classes.

CLASS 254A.—EXCEEDING 900 LB. LIVE WEIGHT.

No. of cows competing	Breed	Live weight	Days in milk	Milk		Butter		Ratio	Points
				Lb.	oz.	Lb.	oz.		
10	Shorthorn . . . . .	1376	44	51	7½	1	12½	29.32	29.15
11	Lincoln Red Shorthorn . . . . .	1478	46	53	7½	1	13½	28.76	30.35
8	Devon . . . . .	1277	55	41	5	1	8½	26.43	25.54
2	South Devon . . . . .	1463	98	49	14	1	14½	26.15	35.83
1	Longhorn . . . . .	1260	52	47	6	1	15½	24.25	32.21
5	Red Poll . . . . .	1347	74	45	6½	1	7½	31.10	26.42
2	Ayrshire . . . . .	1008	45	53	12	2	3½	24.08	35.54
3	British Friesian . . . . .	1152	38	55	12	1	15½	27.94	31.05
12	Jersey . . . . .	973	114	40	10½	1	15½	22.30	38.40
3	Guernsey . . . . .	1064	72	37	6½	1	8½	24.60	27.32
1	Kerry . . . . .	924	33	36	0	1	4	28.80	20.00

CLASS 254B.—NOT EXCEEDING 900 LB. LIVE WEIGHT.

6	Jersey . . . . .	799	75	35	14	1	11½	20.74	30.54
1	Guernsey . . . . .	847	65	34	12	1	4½	27.45	22.73
6	Kerry . . . . .	727	64	27	15½	1	2½	23.96	20.44
1	Dexter . . . . .	700	39	32	12	1	4½	25.56	20.50

CLASS 255.—DAIRY SHORTHORN COW OR HEIFER.

27	Shorthorn . . . . .	—	40	50	10½	1	11½	29.42	27.03
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MILKING TRIALS (GOATS). CLASSES 269 & 270.

Forty goats were entered for these competitions, seven in Class 269 for goats that have previously won a 1st, 2nd or 3rd prize in any milking competition, the remaining thirty-three being in Class 270. The numbers actually tested were three and twenty-two respectively.

The conditions regulating the trials and the points awarded were different from those in force last year at Cardiff, being simplified so as to enable the awards to be published before the end of the Show. They were as follows:—

One point for every 1 lb. of milk.

One point for every completed day since kidding, calculated to the first day of the trials, deducting the first 40 days. Maximum lactation points 6.

Goats that have not produced a live kid within the year previous to the first day of the Show will be disqualified.

Table V. gives the full particulars of the trials and the prizes awarded.

TABLE V.—MILK-YIELD CLASSES FOR GOATS AT DARLINGTON, 1920.  
CLASS 203.—GOATS THAT HAVE PREVIOUSLY WON A FIRST, SECOND OR THIRD PRIZE IN ANY MILKING COMPETITION.

No. in Catalogue	exhibitor	Name of goat.	Breed.	Date of birth.	Date of last milking.	Points.			Awards.
						Milk shed in 24 hours.	Lactation.	Total.	
1929	Mrs. M. Grace	Bramblehorn Bunt	Anglo-Nubian	Mar. 28, 12	May 16	126	132	1037	Second Prize
1930	Mr. J. H. Fennell	Bramblehorn Pearl	Anglo-Nubian	May 1, 12	May 22	40	912	912	Third Prize
1931	San Foxon	Bramblehorn Rosebud	Anglo-Nubian	Mar. 27, 12	Apr. 5	47	470	470	First Prize

CLASS 270.—GOATS NOT ELIGIBLE FOR CLASS 203.

1932	Mrs. R. Fosse	Soldier Nixie	Anglo-Nubian	Mar. 12, 15	Apr. 7	83	420	1192	—
1933	Mrs. R. Fosse	Soldier Nixie	Anglo-Nubian	May 6, 16	Apr. 7	83	420	1192	—
1934	Miss L. Kelly	Regina Agnès	Anglo-Nubian	Jan. 4, 15	May 16	56	600	1060	—
1935	Mrs. C. L. Pickard	Edenbrook Tansy	Anglo-Nubian	Feb. 20, 12	May 24	58	600	1060	—
1936	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1937	Mrs. G. Souther	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1938	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1939	Mrs. G. Souther	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1940	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1941	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1942	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1943	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1944	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1945	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1946	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1947	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1948	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1949	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1950	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1951	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1952	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1953	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1954	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1955	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1956	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1957	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1958	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1959	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—
1960	Mrs. J. C. Stoker	Edenbrook Tansy	Anglo-Nubian	Mar. 6, 14	Apr. 9	48	531	531	—

## EXPERIMENTS IN THE DAIRY.

The following experiments to show the variation in the percentage of fat in milk at different depths of a churn of milk, and also in milk drawn direct from the cow, were carried out

in the Dairy at Darlington, the milk selected being from Short-horn and Channel Island Cattle :—

#### EXPERIMENT 1.

Two churns filled with milk were stood for four hours, after which samples were taken by a sampling tube as follows :—

1. From milk at the bottom of the churn.
2. From the middle of the churn.
3. From the top of the churn.
4. From the whole of the milk in the churn.

The percentages of fat were as follows :—<sup>1</sup>

	Bottom. Fat per cent.	Middle. Fat per cent.	Top. Fat per cent.	Whole column. Fat per cent.
Churn 1. . . . .	1.4	3.55	Too much fat to be read. <sup>2</sup>	5.55
" 2. . . . .	2.5	2.75	Do.	4.925

#### EXPERIMENT 2.

One Shorthorn and two Channel Island cows were selected and an 8 oz. sample bottle of milk was obtained as follows from each cow :—

1. From the first-drawn milk.
2. From the last-drawn milk.

The percentages of fat as shown by the Gerber process were as follows :—

	Shorthorn. Fat per cent.	Channel Island 1. Fat per cent.	Channel Island 2. Fat per cent.
First-drawn milk . . .	.06	1.00	1.30
Last-drawn milk . . .	Too much fat to be read. <sup>2</sup>	Too much fat to be read. <sup>2</sup>	Too much fat to be read. <sup>2</sup>
Mixed samples . . . .	5.60	6.35	5.50

These two experiments seem to show that milk in the udder of the cow just before she is milked is, as regards the stratum of fat, much the same as milk that has been standing in a churn for some little time. If this conclusion is correct, to sell the first-drawn milk from a cow, leaving the rest for her calf (*Grigg v. Smith* [87, L.J.K.B. 488] ; R.A.S.E. Journal, vol. 79, p. 135), as also to sell milk from the bottom of a churn of milk without using a "plunger," or otherwise causing the milk to be mixed (*Knowles v. Scott* [1918], S.C. (J.), 32) ; R.A.S.E. Journal, vol. 80, p. 161), would appear to be almost, if not quite, as bad as abstracting the fat by other methods, and certainly prejudicial to the purchaser.

<sup>1</sup> Two analyses by the Gerber process were made in each case.

<sup>2</sup> The test tubes are only graduated up to 9.00.

## CREAM GAUGE TUBES.

An experiment similar to that carried out at Cardiff, was repeated at Darlington with similar results, showing that while graded glasses may give a comparative idea of the differences in cream that may exist between individual milks, they cannot be accepted as accurate.

TABLE VI.

Breed	Percentage of Cream shown in Cream Gauge	Butter Fat by Gerber. Average of 2 samples
		Per cent.
Shorthorn . . . . .	9.0	3.3
Longhorn . . . . .	13.5	4.1
Red Poll . . . . .	14.0	4.3
Ayrshire . . . . .	10.0	3.875
British Friesian . . . . .	12.5	3.9
Jersey . . . . .	17.5	5.325
Guernsey . . . . .	14.0	4.7
Dexter . . . . .	11.0	4.1
Park . . . . .	8.0	3.5

## THE BROM-CRESOL PURPLE TEST.

This test which is very easy to manipulate should prove most valuable to owners of dairy cattle, as it enables them, where the milk of the herd is abnormal, to pick out the cow or cows whose milk may be the cause of the abnormality, and further, to trace the doubtful milk to the particular quarter of the cow or cows affected.

This test was carried out by Captain John Golding, of the Dairy Research Institute, who most kindly explained and illustrated the process.

His report is as follows :—

The unique possibilities of the Royal Agricultural Society's Show for obtaining a large number of samples of milk from cows of different breeds, afforded just the opportunity required by the Research Institute in Dairying, for testing the variation in the re-action of freshly drawn samples of such milk by means of the Brom-Cresol Purple Test.

The test as described by L. L. Van Slyke and J. C. Baker in Technical Bulletins 70 and 71 of the New York Agricultural Experiment Station, Geneva, New York, consists in adding three cubic centimetres of milk to one drop ( $\frac{1}{8}$ th c.c.) of a saturated solution of Brom-Cresol Purple in water placed in a small tube. This is afterwards mixed by shaking and the colour produced is observed. With normal milk a bluish-grey colour is produced. If the colour differs appreciably from

this, the re-action is abnormal. Acid milks give a yellow colour or a lighter blue. A deeper blue colour may indicate (1) milk from diseased or abnormal udders; (2) watered milk; (3) milk very poor in fat; or (4) milk containing alkali or alkaline salts. Previous trials had indicated the value of the method as a means of finding out abnormal milks.

The practical value of a simple rapid test which would indicate abnormality in the milk of individual cows, must be apparent to all cheese makers who have been troubled with the "Felon Milk" of Yorkshire, the "Weed" of Scotland and those temporary abnormalities which may sometimes escape even the most observant cowman, but which may spoil the bulk of the milk and cause loss to the industry if not detected in time.

No definite announcement as to the value of the test can be made till many more experiments have been performed. It is, however, a simple test which has possible value for the detection of abnormality in the milk of individual cows.

For using the test two cautions are necessary. Firstly, the tubes should be very clean and boiled in distilled water and drained before use. Secondly, the drops of indicator used should be of the same size, using one tube or burette for each series of tests or dropping tubes of the same external diameter held in a perpendicular position and clear of the sides of the receiving tube.

#### PRACTICAL WORK.

In order to demonstrate the variation in the first drawn milk, 48 samples were obtained, through the kindness of a farmer in the neighbourhood, from the first drawn milk from each teat of twelve of his cows.

These were tested as above described, and the tubes fixed on a white board by means of little loops of elastic, the tubes arranged in groups according to the depth of colour.

In the original paper the groups for comparison were made by the addition of quantities of  $\frac{N}{10}$  soda added to 10 c.c. of fresh milk and increasing from group to group by .1 c.c. extra  $\frac{N}{10}$  soda.

In order to cover the range found, colour standards were prepared as follows:—10 c.c. of fresh milk being taken in each case.

Group	1	2	3	4	5	6	7	8
$\frac{N}{10}$ Soda added . . . . .	0	.2	.4	.6	.8	1.0	1.2	1.4
Number of samples of first drawn milk placed in each group . . .	14	18	12	3	1	1		



The four samples falling in groups 4 and 5 came from a Shorthorn cow which was found on enquiry to have a sore and unhealthy udder.

Another sample was taken from a cow which had recently yielded milk "with white clots in it." This gave a colour corresponding with group 6.

Experiments with milk of other herds have indicated that the method might give valuable information in cases of Garget or udder infection, where the milk of separate quarters is tested, more especially if first drawn milk is taken for the test.

The special object of the experiments at Darlington was to ascertain if any marked difference could be observed in the milk of the different breeds of cows as a preliminary to a further trial of the method. The samples were taken as the milk was delivered at the Dairy, each sample being from the milk of one or more cows of some special breed belonging to one exhibitor.

172 of these samples, representing milk from 13 different breeds, were tested.

An analysis of the results follows :—

Breed.	Total No. of samples tested.	Group.							
		1	2	3	4	5	6	7	8
Shorthorn . . . . .	31	8	13	9	—	—	—	—	1
Jersey . . . . .	27	10	13	4	—	—	—	—	—
Guernsey . . . . .	23	15	7	1	—	—	—	—	—
Lincoln Red . . . . .	18	1	8	8	—	1	—	—	—
Devon . . . . .	16	7	3	6	—	—	—	—	—
Friesian . . . . .	13	4	6	3	—	—	—	—	—
Red Poll . . . . .	10	2	5	2	—	—	1	—	—
Ayrshire . . . . .	8	4	3	1	—	—	—	—	—
Park Cattle . . . . .	7	5	2	—	—	—	—	—	—
Dexter . . . . .	7	4	2	1	—	—	—	—	—
Longhorn . . . . .	5	3	2	—	—	—	—	—	—
Kerry . . . . .	4	4	—	—	—	—	—	—	—
Shetland . . . . .	2	2	—	—	—	—	—	—	—

As mentioned in Bulletin 71, page 5, quoted above, milks rich in fat give an appreciably lighter colour. From this it would be expected that breeds giving milk rich in fat would show a higher number of samples in groups one and two. As the cream rises and the colours in the lower parts of the tubes are compared this difference becomes less marked.

The cause of the three abnormal samples falling in groups 5, 6 and 8, could not be investigated on the Show Ground as access to the cows was not possible. These three results were the only abnormal ones. The limits of variation of other samples fall within what may be called normal variation. The indications of variation within these limits could only be determined by a large number of tests under more normal conditions.

### CHEESE EXPERIMENTS.

The experiments commenced last year at the Cardiff Show with the object of ascertaining (a) the time taken, the nature of the coagulation of the milks from the different breeds of cattle in the Show Ground, and (b) the quality and weights of the cheeses made, were continued this year.

It was arranged that the cheeses should be sent to Reading to be kept until ripe for the opinion of Mr. Alec Todd, of the British Dairy Institute, who had kindly undertaken to give his opinion on them, and meanwhile to look after the cheeses until such time as they were ready to be judged.

The cheeses were despatched by rail from Darlington, but were a long time on the journey and so roughly handled in transit that when they arrived they were practically useless.

This is the more unfortunate as this experiment required careful work and attention, and the results this year, so far as they went, were satisfactory and should have been very helpful to those who make cheese.

### SCALDED CREAM EXPERIMENTS.

At the last three Shows of the Society experiments in scalding the milks from the different breeds of cattle exhibited have been reported on in the Society's JOURNAL.

They show that milks rich in fat require—

1. Less time for setting before scalding.
2. The scalding to be at a higher temperature.
3. The duration of the process in scalding to be longer.
4. After scalding, the cream to be left from two to four hours longer than creams from milk not so rich in fat.

The experiments this year at Darlington, which were carried out by Miss A. J. W. Nicholas, M.B.E., confirm these conclusions, as will be seen from the results given in the following table:—

TABLE VII.

Breed	Weight of milk	Time setting before scalding	Temperature at which scalding completed	Time of scalding	Time standing before skimming	Weight of skimmed cream	Fat on skimmed milk	Quality
	Lb.	Hours	° Fahr.	Minutes	Hours	Lb. oz.	Per cent.	
Shorthorn . .	15	15	188	40	24	0 14	·3	Good.
Lincoln Red Shorthorn	15	15	185	40	24	1 1	·65	Fair.
Devon . .	15	15	180	35	24	0 12	·4	Very good.
South Devon . .	15	14	190	45	25	0 13	·9	Good.
Longhorn . .	15	14	195	60	22	1 2	·4	Very good.
Red Poll . .	15	17	180	45	24	0 13	·35	Fair.
Ayrshire . .	15	17	180	30	24	0 15	·7	Very good.
British Friesian.	15	17	180	35	24	0 11	·3	Good.
Jersey . .	15	14	195	50	26	1 7	1·0	Excellent.
Guernsey . .	15	14	188	45	26	1 1	·8	Excellent.
Kerry . .	15	15	175	40	26	1 3	·43	Very good.
Park . .	15	16	185	40	24	1 0	·4	Very good.

The following table gives the times and temperatures for producing the best creams both in flavour, texture, and appearance. They are the results of several experiments carried out in the Showyard and elsewhere.

TABLE VIII.

Breed	Time setting before scalding	Best scalding temperature	Correct time of scalding	Time standing before skimming
	Hours	°Fabr.	Minutes	Hours
Shorthorn . . . . .	15	185	45	24
Lincoln Red Shorthorn . . . . .	15	180	40	24
Devon . . . . .	15	180	40	24
South Devon . . . . .	14	185	45	25
Longhorn . . . . .	14	190	50	22
Red Poll . . . . .	17	185	40	21
Ayrshire . . . . .	17	175	30	21
British Friesian . . . . .	17	180	40	24
Jersey . . . . .	14	195	50	26
Guernsey . . . . .	14	190	45	26
Kerry . . . . .	15	180	40	26
Dexter . . . . .	15	180	40	26
Park . . . . .	16	185	40	24

The work in the Dairy this year was heavier than usual largely attributable to the number of entries in the Milk-yield and Butter Test trials, and also to the experimental work, which necessitates the greatest care on the part of all the workers in the Dairy. I gratefully acknowledge the assistance I received from my stewards, Messrs. Ashton. Byng-Stephens and Routh; from the lady workers in the Dairy, who never seem to tire; from Messrs. Hammond and Craufurd in the Milk-yield and Butter Test trials; from Captain Golding, of the Dairy Research Institute, for the work entailed in the Brom-Cresol Purple experiment, and for his courtesy in explaining its usefulness; from Mr. Hasted, who has always been my right-hand man; and, lastly, from the whole of the working staff in the Dairy.

ERNEST MATHEWS.

Little Shardeloes,  
Amersham.

## AGRICULTURAL EDUCATION EXHIBIT, DARLINGTON, 1920.

CAREFUL scrutiny of the people entering and leaving the Educational Pavilion during intervals covering three days led one to the conclusion that the great majority of them were not directly concerned with the industry. Of such as appeared to be closely connected with farming, the majority were women, and the male agriculturists visiting this section of the Show were for the most part the younger men. The contrast with the attention bestowed on some of the other exhibits was striking, for the majority of the people viewing the livestock and machinery sections were very evidently farmers, and whilst it would certainly be fallacious to draw the inference that the interests of agriculturists are entirely directed to practical matters, it does indicate a state of affairs with which many people are conversant, *viz.*, that the persons who take most interest in agricultural and rural education are those just on the fringes of the industry. This is generally the position in the country at large, and it was certainly the position at the Show. In the case of Agricultural Education Exhibits it is partly due to the conditions which limit the display, and partly to the ideas of the exhibitors. The exhibitors have not yet developed sufficiently the real showman's capacity of judging the minds of the people he desires to attract. It is true that they do attempt to make the facts and theories they wish to convey visible, but they still have to be looked for and rarely are the facts or ideas driven home with any forcefulness. It would be a pity, of course, to encourage any sensationalism, but one or two illustrations of what would appear to be required may be useful. In the North of England the improvement of pastures is one of the most important subjects which could be publicly demonstrated. This was recognised by the institutions concerned, for the Cumberland and Westmorland Farm School exhibited turves showing the effect of dressing with basic slag; Armstrong College was also showing turves, and Leeds University was exhibiting turves showing the effect of treatment with ground lime-stones. These were all good ocular demonstrations of the benefit of treating pastures, and as far as it went the Leeds University set of turves was one of the most striking exhibits in the whole Pavilion. But there was no attempt to show the cost of treatment or the ultimate results in the increase of livestock carried or hay produced, and the consequent increase in cash returns. The mere demonstration of the botanical changes due to the physical and chemical results of treatment may be

quite sufficient as a preliminary demonstration in a laboratory, but it is of little use in a Show Pavilion. Of course, it is assumed that the financial results are as good as the botanical, but the efficient showman never leaves the spectator to make assumptions, but rather tells him everything possible. The worst example of this failure to realise the capacities even of the interested public was the exhibit of the Meteorological Office. This was much to be regretted, for the Meteorological Office had taken the trouble to gather local data for the demonstration of facts relating to weather conditions and crop production. Intelligently used, this data might have proved to be very interesting to northern farmers; but what is the ordinary farmer likely to make of charts on which these terms appear—"Line of mean rainfall," "Centre of gravity," "Line of regression," "Line of least scatter," "Standard of deviation"? Moreover, it was not very easy to obtain from the attendants on this exhibit any simpler explanation of the facts, and the attitude of the majority of the people who just looked at it was clearly one either of amusement or mystification.

But while some criticisms of the exhibitors' methods may be made, it is also fair to say that there is often more scepticism, and suspicion of faddism on the part of exhibitors, in the minds of spectators than is always warranted. This was noticeable near the exhibit of the National Clean Milk Society, but it was pleasant to hear some of the spirited debates which were conducted round this exhibit. Again, the Clean Milk Society would have attained more success if they had been more concerned with the financial side of their campaign, and less with the purely scientific. A statement of the price requirements for clean milk—even an illustration of the price differentiation on qualities of milk in U.S.A.—would have saved the attendants some trouble and made the exhibit more valuable both to farmers and to the public.

The exhibit of prints showing the development of the Shorthorn breed of cattle—the property of Mr. W. Parlour—was of considerable interest and utility, particularly as it was on view in the district which may almost claim to be the cradle of the breed. Such a collection should always be available to the public, and if good reproductions could be got they would be valuable in all schools and colleges where the history of breeds of cattle is studied or taught.

The chief exhibits were provided by Armstrong College, Leeds University, Rothamsted Experimental Station, Research Institute in Dairying at Reading, Cumberland & Westmorland Farm School, and the Education Authorities of the North Riding of Yorkshire, Durham, Northumberland, Westmorland and Cumberland. Others have already been mentioned, but the exhibits

of the Women's Institutes must not be passed without notice. The interest taken by all classes of spectators in the exhibits of manual work and displays of studies made in rural schools indicated the appreciation of this work in the North of England. But an examination of these exhibits showed some conflict of aims on the part of teachers and others concerned with their production. A north-country schoolmaster was strongly of opinion that the proper object was to "make kids not cabbages," and this ultimate aim must not be lost sight of in the acquisition of any mechanical proficiency.

Considerations of space preclude the possibility of the full treatment which the whole of the exhibit deserves, but it appears desirable to attempt to indicate how, as it seems, improvements might be made in this valuable section of the Society's Show. The exhibits as a whole were excellent, but many of them might have been more effective for the purpose in view.

As at the Cardiff Show in 1919 the exhibitors had the advantage of Mr. J. L. Luddington's stewardship.

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## THE FORESTRY EXHIBITION AT THE DARLINGTON SHOW, 1920.

THE Forestry Exhibition at Darlington held in conjunction with the Royal Agricultural Society's Show was, from an educational standpoint, quite up to the standard of previous years, although perhaps the entries were not so numerous as formerly. The variety and quality of the different exhibits bore excellent testimony to the enthusiasm which the exhibition created, and it is reasonable to assume that these shows are attaining a well deserved reputation.

Much interest was evinced by the fact that public bodies, such as the recently constituted Forestry Commission and the Manchester Waterworks Committee (Forestry Department) were Exhibitors. The advent of the former served to show that the Government is fully alive to the situation created by the recent abnormal felling of our woodlands, and that steps are being taken to render this country self-supporting in regard to timber, should the occasion again arise.

The stewards, Mr. C. Coltman-Rogers and Mr. M. C. Duchesne, are to be congratulated upon the excellent arrangement of the building and staging of the exhibits. The main building measured 180 ft. by 40 ft. and was divided into bay recesses, occupied chiefly by exhibition classes only. An annex measuring 180 ft. by 24 ft. in addition to the above, contained boards, specimens of creosoted sleepers and other heavy timbers.

In the exhibition classes, notably those for boards and planks, a large and representative entry was staged, the high merit of which was commented upon by the Judge, Mr. J. P. Robertson, and the following Awards were made:—

*Class 1.* For specimens of Oak, Elm, Ash and Beech Timber—Major J. A. Morrison was awarded the Silver Medal, and the Duke of Marlborough the Bronze Medal.

*Class 2.* Specimens of Larch, Spruce or Scots Pine Timber—Major J. A. Morrison gained the Silver Medal. The Trustees of Viscount Ridley were awarded a Bronze Medal, and the Manchester Corporation Waterworks Committee Highly Commended.

*Class 3.* Specimens of any sort of Hardwood or Broad Leaved Timber—Major J. A. Morrison was awarded the Silver Medal, and the Duke of Marlborough the Bronze Medal.

*Class 4.* Specimens of any sort of Coniferous Timber—The Manchester Corporation was awarded a Bronze Medal.

*Class 5.* Collection of Planks of Home-Grown Wood—Major J. A. Morrison's exhibit gained a Bronze Medal.

*Class 6.* Collection of Panels, Boards or other articles, grown and manufactured on exhibitor's estate—Major J. A. Morrison was awarded a Silver Medal for an exhibit of hurdles and baskets made by blind men from withes grown on the estate.

An excellent exhibit of field gates and hunting wickets was shown in the various classes, the Awards being as follows:—

*Class 7.* For the best Oak Field Gate for farm use, the Duke of Marlborough gained the Silver Medal and the Trustees of Viscount Ridley were awarded a Bronze Medal.

*Class 8.* For the best Field Gate for farm use of any Home Grown Timber—Lord Barnard gained a Silver Medal, and the Trustees of Viscount Ridley the Bronze Medal.

*Class 9.* For the best Hunting Wicket (self closing), made from Home-Grown Timber—Lord Barnard was awarded the Silver Medal. No other award was made in this class, but Viscount Ridley's exhibit was highly commended.

*Class 11.* Fencing from Home-Grown Wood not more than nine yards. Lord Barnard gained the Bronze Medal, the only award in this class.

In the exhibition classes which filled the main building a very instructive and representative collection of exhibits was staged, embracing all branches of Forestry, both practical and theoretical. The chief exhibit in this section was that of the Forestry Commission, which occupied four bays, and was awarded the Special Medal for the best general collection, the purpose of the exhibit being to show the various stages of tree growth from the seed to the mature timber, and the conversion thereof; special reference being made to pitwood and how much of our home-grown inferior hardwood and coniferous timber could be utilised for this purpose.

The dangers which attend the rearing of young plantations were fully demonstrated by the collections of insects and fungi, together with specimens of the damage caused by these agencies. Specimens of tree damage caused by mammals, birds, frost, snow, &c., were also displayed.

Much attention was attracted by specimens treated with preservatives and also untreated, no doubt being left in the mind of observers as to which was the more economical procedure to adopt.

Numerous photographs of woodlands, &c., were distributed over the bays bearing upon the subject exhibited in each bay, these photographs giving the whole exhibit a very pleasing effect, and the award of the Special Medal was well merited.

The English Forestry Association displayed a splendid collection of Home Grown Timber, converted to show the superior use to which timber can be put. Some beautiful samples of British Oak were on view in the shape of panelling, parquet flooring,



trays, dado rail, &c., whilst Ash was shown to advantage for motor building. Other specimens included Beech, Elm, Poplar, Scots Pine, Silver Fir, Cedar of Lebanon, Spruce and Douglas Fir, all of these timbers being representative of some part of the wood worker's craft. The Association was awarded the Silver Medal.

Mention must also be made of the exhibit of Mr. John Patten, jun., Alnwick, whose splendid and instructive exhibit of framed water-colour drawings earned well-merited approval, the exhibitor being awarded a Silver Medal. The drawings were from nature and showed from the earliest to the complete stage the flower and fruit of the Silver Fir, Beech, Larch, Holly, Mountain Ash, Alder, Western Plane, Montpellier Maple, Yew and Spanish Chestnut.

The exhibit of Mr. Joseph Harris, Brackenburgh Tower, included, in part, samples of Scots Pine in pots, illustrating germinative capacity of seed from different ages of trees, and grown on various soils, with an accompanying table showing conditions and results. Unfortunately, the pots containing this very instructive experiment were smashed in transit. The remaining portion of Mr. Harris's exhibit included a well thought out working and stock plan of his Woodlands. Altogether this excellent display proved a great source of interest, and was awarded a Silver Medal.

Mr. M. C. Archibald, Penrith, was awarded a Bronze Medal for a collection of fifty specimens of Home Grown Timber.

The Duke of Wellington also gained a Bronze Medal for an exhibition of insect, fungoid, and other damage to forest trees, and in addition displayed micrographs of various timbers, &c. There were also photographs illustrating Forestry operations and plantations in their various stages, together with a large number of polished specimens of timbers.

Messrs. Wellman Bros. & Co., Windsor, exhibited a number of Forestry Implements and Tools, the firm being awarded a Bronze Medal. The exhibit included a circular saw bench, 5 h.p. petrol engine, Planet hoe and cultivator, monkey jack, saws, axes, bill hooks, and other useful tools pertaining to Forestry.

For a very wide range of tool handles, cut from Home Grown Ash, Messrs. W. Shepherd & Sons, Kendal, were awarded a Bronze Medal. This firm (whose output is very considerable) showed how employment at home might be provided, and at the same time foreign competition fought, by proving conclusively that Home Grown Ash Wood shafts for Forestry tools, mining, and other purposes, compares favourably with American Hickory both financially and in durability, whilst assuring an excellent market to growers of Ash poles. The exhibits were such as are used in railway work, collieries, engineering, ship-

building, &c., the class of timber required for the work being plantation or coppice grown ash of 8 in. to 12 in. quarter girth, and for the small handles, ash from 4 in. to 6 in. quarter girth is generally used.

Messrs. Calder, Ltd., London, displayed a large assortment of creosoted fencing, gates, mining timber, and railway timber, among which was a crossing sleeper of Douglas Fir, grown in Scotland, which measured 20 ft. by 14 in. by 7 in. What attracted a considerable amount of attention was a portable pigstye which could be easily moved by horse. The floor of the pigstye was made of two beech blocks which had the advantage of warmth and easy cleansing. Messrs. Calder's exhibit was awarded a Bronze Medal.

Mr. Maughan, Middleham, exhibited a Calliper Measurer which was awarded a Bronze Medal. With this instrument the diameter of a tree may be ascertained at about fifteen feet from the ground, thus reducing the factor of error and giving a more reliable estimate of the contents than if the measurement was taken at breast height. This exhibit was much welcomed in view of the fact that the Society is desirous of encouraging inventions which will facilitate woodland work and management.

Messrs. Little & Ballantyne gave a most excellent display of ornamental trees and shrubs, amongst which were good specimens of *Tsuga hookeriana*, *Cupressus lawsoniana*, *Abies veitchii*, *Picea pungens*, *Abies concolor*, *Pinus cembra*, and others. For this exhibit a Bronze Medal was awarded.

In conclusion, it was generally agreed that this section of the Show was very successful, not only in promoting further knowledge to those immediately interested, but also by drawing the attention of the general public to the importance of the educational and commercial value of Forestry in this country.

R. W. HUNTER.

J. P. ROBERTSON (*Judge*).

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## REPORT OF THE JUDGES ON THE PLANTATIONS AND ESTATE NURSERIES COMPETITIONS, 1920

THE competitions were confined this year to the counties of Durham, Northumberland, Westmorland, Cumberland and the North Riding of Yorkshire. The total number of entries in the Plantations competition was 26 and in the Estate Nurseries competition 6. An analysis shows that in the two competitions there were eight entries in Durham, eleven in Northumberland, none in Westmorland, six in Cumberland and seven in the North Riding. The distribution amongst the classes is given in the following table:—

Owner.	County.	Number of Entries in Classes.						
		1 & 2	3	4	5	6	7	Nurseries.
Earl of Durham . . . . .	Durham . . . . .	—	1	—	—	—	—	1
Viscount Boyne . . . . .	„ . . . . .	—	—	—	—	2	—	—
Lord Barnard . . . . .	„ . . . . .	—	1	1	—	—	1	1
Col. G. F. T. Leather . . . . .	Northumberland . . . . .	—	1	—	1	1	1	1
Hon. W. H. C. Beaumont . . . . .	„ . . . . .	—	1	1	—	1	—	—
Duke of Northumberland . . . . .	„ . . . . .	—	—	—	2	—	—	1
Manchester Corporation . . . . .	Cumberland . . . . .	—	1	—	—	—	—	1
Mr. Joseph Harris . . . . .	„ . . . . .	—	1	—	1	—	1	1
Mr. W. L. Christie . . . . .	N. Riding Yorks . . . . .	—	2	2	1	2	—	—
Totals . . . . .		—	8	4	5	6	3	6

When one considers the large area covered by the Show and the number of woodland estates in the district, one cannot but feel somewhat disappointed with the comparatively small number of entries. The effects of the War upon the woodlands of the country are naturally still apparent, but it would appear that there may possibly be other factors acting as a deterrent to potential exhibitors. We think these arise mostly through misunderstandings and perhaps mention of them may help to dispose of them.

There is some evidence that small estates consider themselves handicapped when entering into competition with larger ones.

We submit that this is quite unfounded as the past history of the competitions shows that small estates have been prizewinners at least as frequently as large ones and, furthermore, the smallness of the area eligible for entry in most classes is expressly designed to attract small as well as large properties.

In some cases it has been stated that, owing to the War, the woods had been neglected and entries were out of the question. It scarcely seems necessary to reply that the state of rides and paths is not a determining factor in the quality of a plantation but the method and results of management.

Another factor was the influence of competitions to be held in the future. It should be noted that under the present regulations only prize-winning plantations are ineligible for entry in future competitions *if shown in the same stage*. As many of the faster-growing species pass rapidly from one stage to another only a small number are affected by the disqualification.

In turning to the various classes we note that, as in last year's competition, there were no entries in the Hardwood Classes, Nos. 1 and 2. We think the term "Hardwoods as final crop" is somewhat misunderstood and would point out that it includes all plantations established with a view to obtaining a hardwood crop in the end. This naturally embraces plantations of either pure hardwoods or mixed hardwoods and conifers with the latter species as nurses. At the same time we think entries in these classes might be obtained by recognising the fact that hardwoods are likely in future to be grown in smaller proportions in mixtures. This would entail an enlargement of the scope of the classes, and we suggest that the case might be met by extending Class 2 so as to embrace "Hardwood or mixed hardwood and conifer plantations in Stage B."

Secondly, we note that in Class 4 there were only four entries, an evidence of war fellings which can only be remedied in the course of years. We should like to remark, however, that there is still some misunderstanding as regards the limits implied by Stage A and Stage B. We have acted on the principle that plantations in Stage A have only been "cleaned" and that they have not yet reached the state when a thinning with a view to obtaining increased production is culturally desirable. As soon as this thinning is made it becomes Stage B and remains in that class until the completion of the second thinnings. In other words, the operations implied in Stage A consist merely of removing those trees which have been crowded out so as no longer to constitute part of the crop, whereas in Stage B the operations implied are the removal of trees forming part of the crop which interfere with the proper development of better neighbours.

Perhaps it is rather early yet to expect more than five entries

in Class 5, but we would have liked to see more schemes of improvement entered even if they have only been recently put into operation or just drawn up. This class should be most helpful to landowners, for, if nothing else, the scheme would be examined closely and commented upon and a second opinion would be gained. The old maxim "Two heads are better than one" still holds good.

In Class 6 the entries were not numerically representative of the extensive planting of such trees as Douglas fir, Japanese larch, Sitka spruce and Corsican pine during the last 10 to 15 years.

The increase in the number of nurseries entered as compared with last year was gratifying, for it gives a clear indication that planting is being or is about to be resumed.

We have laboured the question of the number of entries and have analysed the position closely in order, firstly, to clear up what appear to be misapprehensions and doubts, and secondly, to try to discover means of increasing the sphere of influence of these competitions. It is readily admitted on all sides that the competitions do succeed in their object of encouraging forestry. We would, however, like to see them fulfil a wider function than this. With the effects of the War, in the clearing of large quantities of timber, and the knowledge of the vital importance of timber to the State in time of emergency, still fresh in the mind of the public, more interest is gradually being taken in forestry matters than hitherto, although still to a comparatively insignificant degree. The next few years will be really important ones in the history of forestry in the British Isles and may easily make or mar future prospects, so that it is highly important to create an atmosphere for the favourable reception of means for the creation of large reserves of timber, both in the minds of landowners and the general public. A larger entry of plantations in the competitions held in connection with the Royal Show would undeniably create greater interest amongst owners, and we suggest the following plan to secure more numerous entries. In the area covered by the Show a local committee of enthusiastic members of the Royal English Arboricultural Society and others should be formed, each member of which would voluntarily consult with all the estates in his neighbourhood, and where permitted see what on each estate is considered worth entering and make suggestions to the owners or their representatives. There would then be no fear of any estate remaining ignorant of the competitions or of any plantation of more than passing interest remaining unknown. Often plantations are not entered, not through lack of interest, but because they are thought not to be of sufficient merit. In such cases the point of view of an outsider may be entirely different, for familiarity frequently

makes one blind to the good points. Further, we would like to see a keen rivalry between the different areas affected by the annual Show as to which can produce the largest number of entries of good class, and we think the formation of local committees would help to secure this.

As far as the general public is concerned, we feel that these competitions might perhaps receive more generous notice in the public Press, which at present consists mostly of a bare announcement of the results.

#### DESCRIPTION OF PLANTATIONS, ESTATES AND NURSERIES.

In Class 3 there were eight entries for plantations of conifers which have been weeded or lightly thinned, including the removal of dead or dying trees, of not less than ten years' growth and not less than four acres in extent.

The Silver Medal was awarded to the Manchester Corporation for the Armboth Low Banks and Round Mount Plantation situated on the western side of Thirlmere Lake, Cumberland, consisting of about ninety acres. The natural features are:—

Soil. 6–18 in. light loam overlying shale.

Aspect, east. Slope, steep. Elevation, 600–1,300 feet above sea-level. Rainfall, 90 in. per annum.

Vegetation, bracken and coarse grass, with mosses and rushes in the wet places, on the lower and ling on the upper elevations. Part of the ground consists of bare outcrop and screes.

Species: about 5 acres Oregon Douglas fir from 600 to 700 feet elevation, Scots pine in shallow soil, Norway spruce in wet places, whilst European larch with a small percentage of beech is the major species. Age—12 years.

The five acres carrying Oregon Douglas fir is by far the best portion of the plantation. The trees were planted on the leeward side of a belt of old trees and the effect of the latter as a protection is most marked. Those nearest the belt (at the south end) average 26 ft. high by 3½ in. quarter girth at 5 ft. up, whilst the largest measure up to 32 ft. high and 5 in. quarter girth at 5 ft. At the north end of the block, where the trees were beyond the effect of the shelter, the average dimensions are 22 ft. high by 2½ in. quarter girth at 5 feet. Complete canopy has been formed and all ground vegetation has been killed, but, as is almost invariable with this species, the trees are very irregular in size. The European larch on the lowest portions of the slope have also become well established, closed up and have killed the ground vegetation, and in some portions are not much inferior to the northern end of the Douglas fir, the best tree noticed being 28 ft. high with a quarter girth of 3½ in. at 5 feet. On passing up

the slope the heights of the trees begin gradually to diminish, but at 1,300 ft. the larch, where they occur, are not much more than bushes. At this elevation Norway spruce is now getting away, for during the last 3 years trees had put on an average of 18 in. per annum in height, and have now reached the height of the larch, with every appearance of rapidly surpassing them in the near future. Scots pine appears to be the only tree to have grown to any extent on the drier portions of the ground. On the lower elevations and in the best places its height is some 6 ft. less than the average for larch in adjoining plots. Where an occasional Corsican pine is found, it is noticeable that it gives very little if any better height growth than the Scots pine. No insect pest has been observed, and apart from slight visitations of larch canker the plantation is very healthy.

The five acres of Douglas fir was entered as a separate plantation in Class 6, but as it is only a portion of the whole block it was transferred to Class 3. This area was also awarded the Gold Medal of the Royal English Arboricultural Society for the best plantation exhibited in this year's show.

The Bronze Medal was awarded to Mr. W. L. Christie, Jervaulx Abbey, Middleham, N. Riding, for compartments C and C1 of East Hills woods on Witton Fell. The plantation consists of 3½ acres Japanese larch, planted 1901, and 8 acres of mixed European larch and Scots pine, planted 1902. Soil, light loam and gravel above Millstone Grit—formerly arable. The aspect is north, elevation 825–875 ft., average rainfall 40 in. per annum. The Japanese larch were pitted as one-year one-year transplants at 4 ft. apart and did not need beating up. The trees on the upper portion have grown very well and average 33 ft. high with 3½ in. quarter girth; the ground is well covered, has a good thickness of humus and vegetation. On the lower portion growth is not so good, the average height being 29 ft. and quarter girth 3¼ in.; whilst the canopy is less dense, grass is coming in; the trees are less well developed and there are many whips present. There are indications here of some disease or injury to the Japanese larch which, although not appearing to be larch canker, needs further investigation. The portion 8 acres of mixed European larch and Scots pine are planted alongside the Japanese larch and the average dimensions of the three species are Japanese larch 29 ft. high, 3½ in. quarter girth, European larch 27 ft. high, 3½ in. quarter girth, and Scots pine 24 ft. high, 3½ in. quarter girth. The European larch here are comparatively free from canker, and Mr. Maughan claims that the mixture of some other species with the larch must be held responsible for this desirable feature. This plantation was entered in Class 4, but as nothing more than cleaning and pruning has been carried out, it was transferred to Class 3.

In Class 4, for conifers from Stage A to the completion of the second thinnings, there were four entries.

The First Prize was awarded to Lord Barnard, Raby Castle, Staindrop, Durham, for Carr's Plantation near Selaby Hall, which is situated at 350 ft. elevation with north and south aspects on very gently sloping ground, with a soil of strong loam on clay. It consists of  $8\frac{1}{2}$  acres of European larch with a very occasional tree of Scots pine and Norway spruce, is 38 years of age and was notch planted at 4 ft. apart as two year-two year transplants. The quality of the crop and the rate of growth vary, the average height for the whole plantation was estimated at 42 ft., ranging from 35 ft. on the lower side to 50-52 ft. on the upper and best portion, whilst the average yield was computed at 2,400 cubic ft. per acre. The trees are well grown and the crowns are restricted to about the top 12 ft. of the tree. The thinnings have been somewhat interfered with by the presence of a few dead trees in patches—doubtless due to the wet condition of the heavy soil—and as a result there are small gaps. The soil surface is now beginning to deteriorate, as is shown by the incursion of grass and other vegetation. There is a small amount of canker present, but this has been kept in check by removing diseased trees and burning the branches. The crop was established with a view to allowing it to grow until large timber size has been reached, but on account of the appearance of the dead trees—which were slightly “pumped” at the butts—some doubt has been felt as to the desirability of carrying out the first intentions. There are many fine large larch in adjacent plantations growing under precisely identical natural conditions, and they are said to come down perfectly sound, consequently we think there need be no fear of allowing the plantation to continue growing. It is suggested, however, that in view of the vegetation covering the soil it is desirable to thin somewhat heavily and underplant with *Thuja gigantea*, beech or silver fir.

The Second Prize was awarded to the Hon. W. H. C. Beaumont, Dilston Hall, Corbridge-on-Tyne, for Sandyford Plantation, Dukesfield, Hexham. This plantation was of pure Scots pine,  $24\frac{1}{2}$  acres in extent, planted 51 years ago at an elevation of about 700 ft. with a north aspect on a soil of sandy loam, with a little surface peat, overlying carboniferous limestone. The plants, two year-one year, were notched at  $4\frac{1}{2}$  ft. apart. The trees have evidently at some time suffered rather severely from snow damage, for many are forked. The stocking varies considerably; in one portion there were as many as 750 trees per acre, whilst in others as few as 400 trees. In the former the trees were for the most part well-grown with a total average height 40 ft., timber height of 30 ft. and quarter girth  $5\frac{1}{4}$  in. over bark at 5 ft.



high. In the latter the individual trees, although of about the same height, were much rougher and averaged nearly double the volume. It was estimated that the average volume for the wood was about 2,400 cubic ft. under bark per acre. The whole plantation now needs a gradual thinning, for in the most densely stocked places there are many suppressed trees, and in the more open spaces some forked trees are interfering with the development of better neighbours. The conditions in this plantation, where the average rainfall is about 33 in. per annum, are typical of a wide district in the South Tyne Valley, where a number of mixed plantations of European larch, Scots pine and—in wet places—Norway spruce have been planted. Measurements taken in such plantations suggest that pure larch, with perhaps the introduction of a small percentage of beech, and the substitution of spruce in wet places, will be a more profitable crop than pure Scots pine or a mixture of larch and Scots pine. As the district is near a large coalfield the extra value of larch as pit-props will be appreciated.

Class 5.—The best example showing systematic management of existing woodland area, including the renovation and conversion of unprofitable wood into a profitable condition. In this class there were five entries and the Silver Medal was awarded to Mr. W. L. Christie, Jervaulx, for the scheme relating to Witton Fell, Grey Yaud and Ramshaw Quarry areas covering a total of 379 acres. Planting was first commenced on Witton Fell in 1815 and progressed until the whole of the original area of 242 acres was completed. The species planted were Scots pine, larch, spruce, oak, ash, beech and elm. In 1896 a scheme of regeneration was begun and by 1914, when operations were checked by the War, 58 acres had been cleared and replanted and an additional 11 acres of new ground had been brought in, making the total area under new plantations 69 acres. During the War 123 acres of mature timber were cleared, the greater part of which will be replanted, and 40 acres of new ground will be added. The area stocked with mature timber at the present time is 70 acres. The soil varies from a more or less thin sand with peat on the high ground to clays and sandy loams on the slopes with light loams on the lower ground. The whole rests principally upon Millstone Grit, which outcrops to the north, but the lower ground contains bands of shales and limestone of lower carboniferous age. The altitude varies from 675 to 1,125 ft. O.D., all aspects are represented and the average rainfall is about 40 in. per annum. The mature crop of 100 years and over was very thin on the ground, but measurements provided by Mr. Maughan showed clearly that on all aspects and on all the different classes of soils at altitudes varying from 900 to 1,150 ft. larch produced much more timber than spruce, and both in turn gave

larger yields than Scots pine. Numerous measurements of trees of the three species growing in mixture side by side tell us that if the average yield of larch is taken as 100 that of spruce was 64, and Scots pine 50. Under the scheme, which is eloquent testimony of much thought and careful study of local conditions, the area is subdivided into conveniently sized blocks or compartments. Due consideration is given to the question of shelter by standing timber to newly formed plantations, and to the necessity for a well-defined series of extraction rides. The species first planted were European larch, Scots pine, spruce and some hardwoods in appropriate conditions, but in late years Douglas fir, Sitka spruce, Japanese larch and Corsican pine have been used. The trees of the latter group of species are generally characterised by an all-round superiority over the older established ones. In one compartment pure blocks of Japanese larch, Sitka spruce and Douglas fir were planted in 1912 at an elevation varying from 1,000 to 1,080 ft. In all cases the canopy is good and complete. The Japanese larch, with an average of 15ft. in height, is the most successful but only slightly better than the Sitka spruce, whilst in the case of the Douglas fir, although there are many trees 15 ft. or more in height, the exposure has had a general retarding effect upon growth. At a little higher elevation and on thin soil a block of Corsican pine planted 3 ft. 6 in. apart is doing well, but is not as good as the other species. In the "sixteen-acre plantation" hardwoods were planted with conifer nurses in 1899-1901 at 4 ft. 6 in. apart on a light loam of good quality at 800-850 ft. O.D. Rabbits cleared many of the hardwoods, but there is still a considerable number of oak, ash and sycamore which have competed well with the conifers and are very clean. The hardwoods should be allowed more room at once or they will become completely suppressed. The Grey Yaud and Ramshaw Quarry area consisting of 76 acres is linked up with Witton Fell and was formerly mostly old woodland. It was cleared, and in 1891 replanting commenced, the whole area being completed in 1898. The species employed were mainly European larch, Scots pine and Norway spruce partly pure and partly in mixture. One compartment of  $5\frac{1}{4}$  acres is composed of pure blocks of Scots pine and Norway spruce on sandy loam overlying Millstone Grit, standing at 750 to 950 ft. elevation on a slope with a northern aspect. The trees were pitted 22 years ago, following an old crop of Scots pine and larch, at a distance of 3 ft. apart. In 1912 the average height of both species was 16 ft., but during the last eight years Scots pine has made more height growth than spruce, the average measurements being  $29\frac{1}{4}$  ft. and 26 ft. respectively. The former showed also a greater quarter girth measure with an average of  $3\frac{1}{4}$  in. as against  $2\frac{1}{2}$  in. in the case of spruce. Immediately above this

plot was a block of Corsican pine in a most exposed position; here the trees are growing at about the same rate as the Scots pine, but are more even in size, less damaged by wind and snow and have formed a complete canopy. The Scots pine now needs thinning, but if all the suppressed and the worst of the forked trees are removed there will be some considerable gaps caused in the stand. In view of the excellent growth of Douglas fir under the conditions, we consider the best course would be to thin somewhat heavily and underplant with that species.

The Second Prize was awarded to Col. G. F. T. Leather, Middleton Hall, Belford, Northumberland, for his scheme relating to Detchant Wood. In this case also the scheme has been very carefully considered from all points of view, but as its operation only dates from 1902 we considered that the Jervaulx scheme was superior in being able to show results over a longer period of years. Detchant Wood, including new ground taken in recently, covers an area of 335 acres and has always been a wood so far as can be ascertained. In 1902 the present owner found that it was practically derelict and that spasmodic attempts at clearing and replanting had not been very successful. Accordingly it was determined to clear the wood systematically from east to west, against the prevailing winds, and replant. Rabbits caused havoc in the first blocks to be replanted, but after the whole was fenced with netting and stringent measures were adopted there was an improvement. Up to the outbreak of war about 90 acres had been felled and replanted. The soil varies between loam and clay, which is mostly derived from "Whinstone." The elevation varies from 150 ft. to 500 ft. above sea-level, the general aspect is north-east, and more or less sheltered. The climate is not severe and the rainfall averages about 23 in. per annum. All species of conifers thrive, especially Douglas fir, whilst ash also produces good timber and seeds itself freely. One plantation, formed in 1902 with larch and Scots pine, did not take well, was underplanted six years later with Douglas fir and now provides a useful example of the value of underplanting.

The scheme describes the work done in the wood up to the present time and details the operations to be carried out up to the year 1926-27. We would like to suggest that perhaps some improvement might be made if the rides are straightened out during the course of replanting and the compartments made rather more uniform in size. There are numerous ash seedlings, but many of these have become deformed by frost, rabbits or other influences, and we think they could be improved if they were cut back to the ground level and the best shoot of each selected after a year or two of growth.

We were able in this class to commend highly the scheme

submitted by Mr. Joseph Harris, Brackenburgh Tower, Carlisle, for dealing with Lazonby Fell. This area consists of 245 acres, of which the old woodland of 80-90 years old Scots pine and larch covers 66 acres and the remainder, excepting 2 acres of nursery, comprises plantations from 12 years of age downwards. This scheme, like the two preceding ones, was accompanied by coloured plans showing the progress and intended extent of the operations of felling and replanting. Provisions are made for the completion of the felling of the remainder of the old wood and replanting during the next 10 years. The vegetation has been the guiding factor in the choice of species, and on the light loam derived from Permian Sandstone the following choice appeared to be justified by results: larch where strong bracken occurred, Douglas fir where the bracken was not so strong and became mixed with ling and grasses, Sitka spruce in wet rush-abounding places, Corsican pine and the erect variety of Mountain pine on rock outcrops with little or no vegetation.

Class 6.—Plantation of not less than two acres of any of the rarer conifers, pure or mixed, of not less than five nor more than 30 years' growth. There were six entries in this class.

The Silver Medal was awarded to Mr. W. L. Christie, Jervaulx Abbey, for 3½ acres—compartment A—in the Thirsting Castle working section of the woods. It is situated at an elevation of 650-750 ft., with a north aspect, on a light loamy soil above Millstone Grit, the rainfall being about 40 in. per annum. The species present are Oregon Douglas fir, Colorado Douglas fir and Sitka spruce in pure blocks, which were pitted 4 ft. 6 in. apart in 1910. Throughout the blocks of conifers the ground is completely covered and there is no surface vegetation whatever. The heights of the trees are:—

	Best Tree.	Average Tree.
Oregon Douglas fir . . .	34 ft.	24 ft.
Colorado Douglas fir . . .	19 ft.	10 ft.
Sitka spruce . . . . .	24½ ft.	20 ft.

The situation is a sheltered one, so we find no damage due to wind, but the Oregon Douglas are in many cases much bent by snow, whereas the Colorado Douglas and Sitka spruce have not been affected in that way. We consider the damage is due to the Oregon Douglas having been planted too closely, and that a gradual thinning will remove risks of further damage, whilst future plantations might with advantage be planted at say about 5½ ft. apart. The Oregon Douglas vary very much in girth, whereas the Colorado Douglas were less variable and the Sitka spruce were most uniform. This plantation provides conclusive evidence of the inferiority of the Colorado (Blue) Douglas as compared with the Oregon (Green) Douglas. The growth of

Sitka spruce is particularly interesting on account of the dryness of the soil, derived as it is from the Millstone Grit formation. We consider that this species is much more suitable for such soils and conditions than are any of the pines which are usually planted thereon.

The Bronze Medal was awarded to Col. G. F. T. Leather, Middleton Hall, for a plantation of 7 acres in Detchant Wood. It was originally planted in 1891, but was much eaten by rabbits and hares, and in 1913 it was finally replanted as a pure Douglas fir crop at 4 ft. apart by pitting. The trees have grown very well, have completely covered the ground, forming a dense canopy and killed all the vegetation. During the last two years they have made a height growth of 4-5 ft. each year and are now averaging about 15 ft. high, whilst the best measure as much as 20 ft. high and 12 in. girth, in 7 years. One or two of the originally planted trees—larch, Scots pine and hardwoods—are still standing; they are not good specimens, never likely to make good timber and are beginning to affect the Douglas around them. It is always best in such cases to remove the older trees at the beginning and make a fresh start.

Class 7.—For the best-managed woodland estate, not less than 1,000 acres in area, the judges to take into account the production of timber, ornamental planting, planting for sporting purposes, and the improvement of residential amenities and proper management of hedgerow timber. There were three entries.

The Special Medal was awarded to the estate of Col. G. F. T. Leather, Middleton Hall, Belford. The estate consists of 5,150 acres including 574 acres of woodland, in which the ruling soil, climatic and other natural conditions are much the same as those described for Detchant Wood in Class 5. The timber produced on the estate consists of most species of both hardwoods and conifers, but in addition to the usual trees found on most properties there are to be found good-size trees of *Thuja gigantea*, silver fir and black Italian poplar growing under woodland conditions. The woodlands on the estate are of all ages and consist mainly of conifers, either pure or mixed. It is scarcely ever necessary to plant hardwoods since they regenerate themselves very freely; ash is almost a weed throughout, so freely does it seed itself, and everywhere the trees of this species are encouraged as the value of its timber is fully recognised. Of late years the more recently introduced exotic conifers have been mostly planted and are succeeding generally. *Thuja gigantea* surprised us most in growing remarkably well on an average dry soil with such a low average rainfall as 23 in. per annum; the larger specimens in the woods were well cleaned, and we may note in passing that on a neighbouring estate this species grown pure

has cleaned itself certainly much better than Douglas fir is in the habit of doing. Silver fir is also very healthy and a rapid grower and produces an abundance of natural seedlings. The woods are very free from diseases and pests, almost the only one of any importance being the universal larch canker. From a forestry point of view the estate is eloquent of the interest and energy displayed. Old unprofitable woods are being rapidly cleared with a view to replanting, on the lines described in Class 5. Heavy fellings were in progress at the time of our visit, and in addition to the permanent sawmill, a temporary one is installed in the woods. A light railway connects the woods with the mills for the sole purpose of extracting timber, a petrol locomotive is used for hauling trucks and is stated to be much cheaper than the usual form of horse traction. In addition to the commercial woods, there are numerous shelter and ornamental woods and belts, all of which are treated for the end in view and are kept well thinned with the object of obtaining the maximum yield of timber as well as shelter, game cover and ornament. Although timber is the primary object the general effect is also amply secured, and when such a wood becomes ripe for felling it is gradually removed and replanted. In the park there are numerous handsome specimen trees of a more ornamental nature, and we found many natural seedlings of Douglas fir, *Cupressus Lawsoniana* and *Abies nobilis*, as well as of other species already noted. The appearance of these is undoubtedly due largely to the strict policy of keeping down the rabbits, which was adopted some years ago and is still maintained. There are two small nurseries,  $1\frac{1}{2}$  acres and 1 acre respectively, in which bought seedlings are lined out in preparation for planting later. The sites are to be changed next year and the area under nursery increased. In the estate yard is an up-to-date sawmill driven by a suction gas-engine, which consumes sawdust and other wood waste solely as fuel. In addition there are carpenters' and joiners' shops fitted with the most modern woodworking plant. All the timber used for fences, gates, buildings, etc., on the estate is home grown, and we noted that the roof of a new workshop consisted of boards of *Abies nobilis* underlying tiles. In the well-arranged drying sheds is a large collection of seasoned and drying planks of all species. The equipment is completed with a modern pressure creosoting plant. We were much impressed by the business-like manner in which the woods branch of the estate is managed and with the excellent results achieved by the application of the principles of sound forestry combined with intensive utilisation. The energy and foresight displayed are not, however, confined to the existing woods, for a considerable area of new ground has been recently fenced in with a view to planting.

The Silver Medal was awarded to the Raby Castle Estate of Major Rt. Hon. the Lord Barnard, M.C. The total area of the estate is 22,621 acres, of which 2,085 acres are woodlands ranging from 1 to 200 years of age. The soils of the woodlands vary from poor sandy loam to clayey loam overlying clay, gravel or sand. The elevation ranges from 200 ft. to 1,000 ft. above sea level, the climate is not severe and the average yearly rainfall is about 33½ in. The two principal woods on the estate are North Wood, 225 acres, and Great Wood, 81 acres in extent. About two-thirds of North Wood is old wood, planted in 1740, consisting mostly of beech with other hardwoods and some conifers. The whole wood was planted about this time, but one-third has been cleared and replanted since 1857 and part is in process of being cleared at the present time. The old timber is over mature, and, in fact, depreciating, but whereas too early and heavy thinning is indicated, there is some very fine old timber still standing. Principally the lack of demand for old beech has seriously affected the clearing and replanting of the area. In the more recently planted sections a mixture of conifers and hardwoods is largely employed, but the presence of large numbers of rabbits is very prejudicial to success. The Great Wood still contains a small portion of 190 years old mixed hardwoods, but the majority has been cleared and replanted gradually since 1857 under a defined scheme. Here, as generally throughout the woodlands on the estate, the object is to secure a final crop of hardwoods after nursing with conifers. The system used is to plant two rows of conifer with one row of hardwood, the conifers being notched and the hardwoods pitted at 4 ft. apart in and between the rows. Some black Italian poplar has recently been planted in clumps with conifer; this tree also occurs in various ages in many of the woods and the timber is of good quality. The main woods on the estate occupy very prominent positions on high ground surrounding the castle, and *en masse* form a very picturesque combination as well as providing very efficient shelter for grazing land. In addition there are a number of semi-ornamental woods nearer home which consist mostly of very large beech of great age. Portions of these woods have from time to time been cleared and replanted, but here again the numerous rabbits influence both the success and the treatment of the plantations. In the ornamental woods are large numbers of very fine specimens of the commoner species and portions of the plantations are preserved for their great beauty. The estate nursery extends over four acres of ground, with a soil varying from loam to clay loam. Here are raised both seedlings and transplants for estate purposes, much of the work being carried out with success during recent years by women. The permanent sawmill is well equipped and adjoining are carpenters' shops and

seasoning sheds. Considerable quantities of home-grown timber are consumed in the construction of buildings, gates, fences and for other estate purposes.

The Bronze Medal was awarded to the estate of Mr. Joseph Harris, Brackenburgh Tower, Carlisle. The area of the estate excluding moorland is 3,578 acres and of the woodlands about 660 acres. The latter are situated partly on a dry sandy loam and partly on clay overlying carboniferous limestone. In the former case conifers, with a slight percentage of beech, compose the woods, whereas on the stiffer soils are found mixtures of conifers with a large proportion of hardwoods. The most successful species is undoubtedly the European larch, which at least maintains as good a rate of growth as the Japanese larch and Douglas fir. The game, ornamental and shelter plantations occur mostly on the heavier soil, where the quickest-growing species are wych-elm, alder and ash. The mixtures now require very careful treatment in order to preserve the more valuable hardwoods, and it is suggested that a series of gradual thinnings is advisable, to be followed by underplanting with silver fir, beech or Thuja according to the soil. The underplanting will also provide cover for game, which cover is generally somewhat deficient. A considerable amount of timber, chiefly oak and ash, is cut from the hedges and sawn into plank for home use or for sale. There are three nurseries on the estate; these are referred to in the next class. Two temporary sawmills belonging to the estate have been working here for some years, but there is no permanent mill and no creosoting plant. The timber is mainly used for private purposes, but quantities are also sold, and in conversion the fullest use is made of the timber.

*Estate Nurseries.*—In this class there were six entries for the best-managed general estate nursery.

The First Prize was awarded to Mr. J. Harris, Brackenburgh Tower, Carlisle, for his three nurseries, totalling 3 acres in all. The largest is situated on light dry sandy soil at an elevation of 750 to 800ft. with a south-west aspect. The second nursery of  $\frac{1}{2}$  acre is situated on stiff clay soil at an elevation of nearly 600 ft., on level ground; whilst the third has a strong loam soil at an elevation of 420 ft., and although facing west is well protected by high walls. The results obtained at all nurseries are very good, and, excepting a portion of the largest which was under treatment for cockchafer grub by spreading gas-lime, were well stocked at the time of our visit.

The most successful beds were those containing 180,000 seedling ash which, if anything, were rather too thick on the ground, 56,000 Corsican pine two-year seedlings, 76,000 Japanese larch one-year seedlings and fifteen beds of European larch containing 95,000 two-year seedlings. In the lines the best



batches were of 20,000 one year-one year ash, and 64,000 Scots pine one year-one year from 2 lb. of seed. All the work is carried out as economically as possible so long as efficiency is not sacrificed. Seeds of as many species of trees as exist on the estate, both of hardwoods and conifers, are collected at home at a very low cost, whilst natural seedlings are collected from the woods and lined out in the nurseries. The average cost of preparing the beds by digging one spit, levelling, sowing and top rolling is 5*d.* per sq. yd. As an example of the cost of transplanting we may cite the case of the 64,000 Scots pine which were lined out as one-year seedlings by 4 men and 3 boys with a planting board at the rate of 14,000 per day at a cost of 2*s.* 10*d.* per 1,000. The cost of the plants here are by far the lightest we met with anywhere and, for plants ready to go out into the woods, were stated to be:—two-year two-year Scots pine 11*s.* 3*d.*, two-year one-year European larch 16*s.* 8*d.*, two-year two-year Norway spruce 12*s.* 6*d.*, two-year two-year Corsican pine 12*s.* 7*d.* and ash one-year one-year 10*s.* per 1,000 plants; the cost of seedlings was given as 4*s.* 11*d.* and 5*s.* 3*d.* for two-year seedlings of Scots pine and Corsican pine respectively, 11*s.* for two-year European larch and 5*s.* for two-year Norway spruce per 1,000 in each case. These costs include all labour and seed. The quality of the work in all branches was of a high standard. On the sandy soil no manure has been applied other than "green manure" obtained by turning in green lupins. In the other nurseries breaks are utilised for growing potatoes, which are manured in the ordinary way. The planning of the nurseries is strictly utilitarian, if somewhat severe, no space being taken up except by trees of economic value. All the plants used on the estate are raised in these nurseries direct from the seed-bed. The position of the nurseries is most convenient with reference to the respective soils of the estate woodlands.

The Second Prize was awarded to the Manchester Corporation for their nursery at Thirlmere which covers 4½ acres, on soil varying from sandy loam over gravel to clay loam, with west and south-west aspects, on slightly sloping ground at an elevation of about 550 ft. O.D. One portion of the nursery is confined to seed-beds in which are raised practically all the seedlings necessary for the estate. The remainder of the ground is used for transplants with the usual break, which in this nursery is cropped with turnips instead of with potatoes as is usually done. The soil is very stony and the lower portion is subject to inundation and frosts, but in spite of these drawbacks the ground was well cropped and, excepting some Norway spruce on the lower side, the plants were of a very good colour and shape. The work throughout was good, the planning excellent and, being in an exposed position, ample shelter in the form of beech and Cotoneas-

ter hedges has been provided. The cost of the plants ready for planting out was given as: European larch 50s., Japanese larch 60s., Scots pine 40s., Norway spruce 50s. and Sitka spruce 60s. per 1,000.

In this class we were able to commend highly the nursery of the Earl of Durham, Lambton Castle, Fence Houses, Durham. It is  $1\frac{1}{2}$  acres in extent on an old garden site with a clay loam soil, at an elevation of 100 ft., having a South-east aspect. All the plants were bought in as seedlings and lined out in the nursery and were looking well. The cost of the plants ready for going out were given as: Scots pine 65s., Norway spruce 70s., European larch 80s., ash 60s., beech 100s., Corsican pine 100s., and oak 72s. per 1,000 plants. The quality of the work was good and the nursery was very well kept.

The prices given in the three cases provide strong evidence of the value of raising at home all plants required. It is increasingly becoming the custom to dispense with seed-beds in the estate nursery and to buy seedlings, largely on account of the poor germination that has been obtained in recent years. In spite of this, we are absolutely convinced that it is a great saving to raise one's own seedlings, both in cost and the reduction of losses due to transplanting. We admit that the successful raising of seedlings is an operation attended with many difficulties and is somewhat specialised; therefore we recommend that wherever possible one man should be detailed for this special work. Small estates will mostly consider it an extra expense that is not justified by the quantity of plants required; in such cases we strongly recommend the co-operation of neighbouring owners of woodlands for the establishment of a central seedling nursery, from which seedlings could be sent out to each individual estate for transplanting in its own nursery, each estate bearing a share of the cost in proportion to the quantity and class of seedlings received therefrom. In any district there is usually to be found at least one man who takes a special interest in seedlings and who is more successful than the majority in producing good seed-beds.

#### POINTS OF GENERAL INTEREST.

The most serious enemy of the woodlands on many of the estates visited was the rabbit. It is surely quite time that we all took to heart the lessons so dearly bought and either make up our minds to exterminate rabbits altogether or banish them from the woods to a warren.

During the last few years there has quite rightly been a call for a wider planting distance. The chief objects in view are: to reduce the number of plants used, to reduce the labour bill in

planting and to save expense by eliminating the earliest thinnings which mostly yield material of little or no value. These are all very good reasons for adopting a wider planting distance, but we must not sacrifice the crop on the altar of economy. We must never lose sight of the fact that it is essential to secure a complete canopy at a reasonably early date in order to obtain good-quality timber and to preserve our soil by eradicating surface vegetation. This is of such primary importance that we may well use it as a guide to our planting distance. Taking all points of importance into account, we are of the opinion that a suitable distance apart would be one which under normal conditions for the area would produce a complete canopy in from 10 to 15 years from the time of planting, the shorter time referring to the best localities and the longer to poor localities, with variations between them. One can generally find examples of plantations under conditions similar to those where planting is proposed and the deduction becomes fairly simple.

In the matter of "beating up" failures we have in the past been far too diligent; we have looked too hard at the gaps caused by the deaths of single trees, whereas we ought to try to picture in our minds the probable condition of the plantation at say 15 to 20 years of age. Unless there is very considerable failure, say of the order of 20 per cent. or more, there is no need to spend considerable quantities of money in filling up—provided that the failures are not in patches, when, of course, some repairs will be necessary. We must not forget, however, that the wider the distance apart we plant so will the necessity for beating up in case of failures be more apparent.

Again, the work of cleaning in the first 3 or 4 years after planting has been carried out much more thoroughly than can be afforded in these days, and, in fact, much more so than is often even necessary. It is surprising how much apparent choking young plants of all species can withstand without undue harm, and so long as the leaders and tops of the plants are not covered over they will ordinarily push through. Instead of cleaning the ground like a garden it is ample merely to remove such weeds and vegetation that are actually harming the plants. In many cases, switching only the leading shoots of such plants as brambles and briars is often sufficient for the purpose.

Pruning is much resorted to in all parts of the country, and this is quite an expensive operation. There is a good deal to be said in favour of the pruning of persistent dead branches of such species as Douglas fir, but it is certainly not an essential forestry operation to prune every single tree in the plantation. If pruning is carried out at all, then in order to do it as cheaply as possible, only the best trees which are likely to form the final crop and possibly the latest of the thinnings should be treated; the

smaller specimens which will obviously be removed long before maturity should be left untouched.

The method of planting to be adopted in any case should be closely considered. There are conflicting opinions as to the effect of the different methods—*e.g.* notching versus pitting—upon the ultimate crop, but whereas there is something to be said for both sides, the question of cost seems to us to dictate that in the case of conifers the method of pitting is absolutely out of date, by reason of the slowness of the operation and its consequent costliness. Conifers should be either notched or mattock-planted, and, whereas, quite large plants can be successfully used in this way, success is much more probable with smaller plants—in many cases, seedlings straight from the seed-bed can be used—and it suits all pockets better to use them. Only in very exceptional cases should conifers be pitted. It is generally stated that hardwoods should be pitted and this method is probably universally employed; we would like, however, to see experiments carried out in notching hardwoods.

As a further step towards economy of working, we would recommend a much-increased use of "rough" or "forest" and "temporary" nurseries. In this way much of the expensive permanent nursery work is obviated, the carting of plants is cheapened and, if such nurseries are established *pro tem.* on the area to be planted, there is every chance of increasing the success of the plantation from the very beginning.

In permanent nurseries we would like to see discarded altogether the old practice of allowing the worst plants of a batch to remain an extra year or two in the hope that they will have grown by the end of that period to a suitable size for planting out. As a general rule, weak nursery plants will retain that weakness throughout life, yielding a poor crop of timber and predisposing the trees to any pest or disease that may happen to come along. From all points of view such plants had better be burned when the main portion of the batch is moved out of the nursery.

Close consideration of such matters as have been outlined above may greatly assist in reducing the outlay on our woods and in producing better financial results and better crops of timber than perhaps have been obtained hitherto.

We take this opportunity of thanking Mr. Charles Coltman Rogers and Mr. Edward Davidson, who were responsible for the excellent arrangements for the tour, and also the gentlemen who kindly entertained us and provided cars for the purpose of visiting the exhibits.

W. R. BROWN.  
A. P. LONG.

REPORT OF THE COUNCIL TO THE  
ANNUAL GENERAL MEETING OF GOVERNORS  
AND MEMBERS OF THE SOCIETY,

HELD AT THE  
ROYAL AGRICULTURAL HALL, ISLINGTON, LONDON, N.,  
On WEDNESDAY, December 8, 1920, at 2.30 p.m.

**Membership.**

1. The Council have to report that the list of Governors and Members has undergone the following changes during the year which has elapsed since the Annual General Meeting on December 10, 1919: 43 new Governors (including 6 transferred from the list of Members under By-law 7), and 1,093 new Members have joined the Society, whilst the deaths of 6 Life Governors, 7 Governors, 106 Life Members, and 172 Members have been reported. A total of 37 Members have been struck off the books under By-law 12, owing to absence of addresses; 2 Governors and 145 Members under By-law 13, for arrears of subscription; and 1 Honorary Member and 156 Annual Members have resigned.

**Deaths of Governors and Members.**

2. By the death of Lord Moreton, the Society has lost one of its Trustees and an active member of the Council, who had filled almost every office connected with the Society's operations.

A resolution in the following terms was passed by the Council on March 3, and forwarded to Lady Moreton with an expression of the Society's sympathy and condolence:—

“That the Council greatly regret the loss they have sustained by the death of Lord Moreton, who had been a member of the Council for forty years, and whose able assistance for so many years and on so many occasions had been of the greatest benefit to the Society and to the cause of agriculture generally.”

3. It is with regret that the Council have also to record the death of Mr. Robert W. Hobbs, who, in consequence of failing health, resigned in May, 1919, after sixteen years' service on the Society's governing body, as the representative of Oxfordshire. Amongst other Governors and Members whose loss by death the Society has to deplore are the Earl of Lonsborough (Governor), Lord Digby (Governor), Lord Egerton of Tatton (Governor),

Lord Glenconner, Lord Polwarth, Lord St. John, Lady Wantage (Governor), The Rt. Hon. Jesse Collings, Sir C. T. Dyke Acland, Bart., Sir John A. Brooke, Bart., Sir R. M. Brooke, Bart. (Governor), Sir H. J. Ellis-Nanney, Bart., Sir John Gilmour, Bart., Sir E. W. Greene, Bart., Sir W. F. G. Guise, Bart., Sir John C. Horsfall, Bart., Sir E. G. Loder, Bart., Sir H. B. Praed, Bart., Sir H. F. Vernon, Bart. (1863), Sir Lindsay Wood, Bart., Sir J. H. Maden (Life Governor), Sir John McLaren, K.B.E., Sir Henry M. Plowden, the Hon. H. W. Fitzwilliam, the Hon. James Dunsmuir (Life Governor), Col. the Hon. W. Le Poer Trench, C.V.O. (Life Governor), Capt. H. L. Brackenbury, M.P., Mr. William Brooke (1856), Mr. E. Lovell Clare, Col. R. G. Cosby (1869), Mr. George Courtauld, Lt.-Col. G. Savile Foljambe, Mr. Italo Giglioli, Mr. A. C. Hall (Governor), Mr. F. Wilson Horsfall, Mr. F. H. Jennings, Lt.-Col. A. S. Jones, V.C., Mr. Edward Kendrick, Prof. E. Kinch, Mr. John Laverack, Mr. C. S. Mainwaring, Mr. John Malcolm, F.R.C.V.S. (Chief Veterinary Officer at the Society's Shows for many years), Mr. C. F. Marriner, Mr. G. T. Marriner, Mr. C. R. Moorsom-Mitchinson-Maude (Life Governor), Mr. Joseph Morton, Mr. F. E. Muntz (Governor), Mr. H. W. Palmer, Mr. J. C. Parr, and Mr. J. H. Stokes.

**Number of Governors and Members on Register.**

4. The above, and other changes, bring the total number of Governors and Members now on the Register to 11,801, divided as follows :—

249	Annual Governors ;
128	Life Governors ;
9,008	Annual Members ;
2,391	Life Members ;
25	Honorary Members ;

11,801 Total number of Governors and Members as against a total of 11,348 on the Register at the end of 1919.

**Presidency.**

5. Mr. R. M. Greaves, of Wern, Portmadoc, North Wales, Chairman of the Implement Committee and a Vice-President of the Society, who first joined the Council in 1900, is unanimously recommended for election at the Annual Meeting as President for the ensuing year.

**Annual Election of Council.**

6. The Members of Council who retire by rotation at the forthcoming Annual Meeting are those representing the following electoral districts of Group "A," viz. :—Northumberland,

Yorks. (North Riding), Lancashire and Isle of Man, Cheshire, Derby, Northampton, Norfolk, Bedford, Hertford, Middlesex, Stafford, Worcester, Monmouth, Cornwall, Dorset, Hampshire and Channel Islands, and Scotland. Members resident in these districts have been communicated with, and the necessary steps are being taken for the election or re-election of representatives for the divisions concerned.

#### **Honorary Membership.**

7. The Honorary Membership of the Society has been conferred on Monsieur Léon Boereboom, Director of Agricultural Reconstruction for Western Flanders, whose co-operation with the Agricultural Relief of Allies Committee in the distribution of live stock to farmers in the devastated areas of Belgium, has been of the greatest assistance to the Committee; and also on Mr. E. J. Powell, Secretary of the Smithfield Club and late Secretary of the Shorthorn Society, in recognition of his long and valuable services in the several spheres in which he has worked for upwards of 50 years.

#### **Accounts.**

8. In accordance with the By-laws, the balance-sheet has to be presented for consideration at the Annual General Meeting. The Council therefore beg to submit the balance-sheet for the year 1919, with the Statement of Ordinary Income and Expenditure. These accounts were published in Volume 80 of the Journal issued to Members this year, having been duly examined and certified as correct by the Auditors appointed by the members, and by the professional Accountants employed by the Society.

#### **Concession to Live Stock Exhibitors.**

9. Early in the year an intimation was received from the Railway Clearing House that they were unable to restore the facilities in practice before the war in connection with the conveyance of live stock to and from agricultural shows. The Council thereupon arranged for a deputation representative of agricultural and kindred societies to wait upon the Minister of Transport. It was emphasised by the Deputation that the increase in the charges for the conveyance by rail of live stock going to and coming from agricultural shows, combined with the withdrawal of the pre-war railway concessions to exhibitors, was having a detrimental effect on the sending of exhibits to shows and on the breeding of high-class stock generally. Sir Eric Geddes was impressed by the views put forward and undertook to make a Special Reference to the Rates Advisory Committee on the subject. Evidence on behalf

of the Society was given before this Committee by Mr. John Evens. Subsequently it was announced that the Minister of Transport had issued a direction to the railway companies that the concessions formerly granted in respect of the conveyance of live stock to and from agricultural shows were to be restored on and from May 17. These concessions provide that live stock returning from a show unsold is to be conveyed at half-rate, and that attendants accompanying the live stock to the show and the necessary provender for consumption on the journey, are to be conveyed free. The thanks of exhibitors are due to Mr. Evens for his efforts in this matter, and also to the Ministry of Agriculture for the support given to the societies in their application.

#### **Darlington Show.**

10. In conjunction with the Yorkshire and Durham County Agricultural Societies, the Seventy-ninth Annual Exhibition was held at Darlington from June 29 to July 3. The Show as a whole covered a site 130 acres in extent, and was undoubtedly one of the finest exhibitions of its kind ever organised in this country. The entries of live stock were more numerous than has been the case for several years, and in every section the quality of the exhibits was of a high order. The parade of animals in the large ring formed a magnificent spectacle which could not be equalled in any other show, either at home or abroad. There was a more extensive display than usual in the Implement department, the machinery in motion section being considerably bigger than on any former occasion. In the Horticultural, Forestry, and Educational departments also noteworthy exhibits were staged.

H.R.H. the Duke of York, who was the guest of the Acting President, the Marquis of Londonderry, at Wynyard Park, visited the Show on two occasions. On the Wednesday His Royal Highness attended the General Meeting, on which occasion he was elected a Member of the Society; and on the following day he was present at the Official Luncheon given in the Showyard by the Mayor of Darlington.

The Society's reception in Darlington was of a most cordial character, and the Members of the Local Committee spared no effort to promote the success of the Show.

In spite of the broken weather on the last three days of the week, the aggregate attendance reached 182,892 and the total money receipts in the Showyard did not fall far short of the Cardiff figures. Owing, however, to the greatly enhanced expense of almost everything connected with the Show, it is a matter for regret that the financial result is a deficit of £7,766 5s. 8d.



**Special Committee.**

11. In view of this unfortunate state of affairs, the Council at their Meeting in July appointed a Special Committee to go into the whole question of the finances of the Society and to report thereon.

12. The Special Committee gave careful consideration to the financial position of the Society, and especially in its relation to future Shows. In order to meet the heavy cost of materials and high wages in connection with the building of the Show-yard, the Committee recommended increases of the entry-fees in certain Stock sections, and in the charges for space for Implement exhibits. They also recommended that, as the charges for admission had not been raised in proportion to the cost of the Show, the following charges should be made in future:—First day, 10s., Second and Third days, 5s. each, Fourth day, 3s., and Fifth day, 2s.; Season Ticket, £1.

An enquiry was also conducted by the Special Committee into the financial position of the Woburn Experimental Farm. There was no question that the farm has, in the past, made valuable contributions to agricultural research; but, taking into consideration the expenditure on the farm, the small practical general utility of the experiments, and the lack of interest on the part of Members, the Committee were unanimously of opinion that the Woburn Farm should be given up.

The Report containing these recommendations was considered by the Council on November 3, and, after discussion, was adopted by them. Notice has been given to terminate the tenancy of the farms at Woburn at Michaelmas, 1921.

**Derby Show, 1921.**

13. Next year's Show will be held at Derby from Tuesday, June 28, to Saturday, July 2. To enable the catalogue of the Show to be prepared earlier, it has been decided to change the date for the closing of the Stock entries to May 2.

**Prize List.**

14. Offers of Champion and other prizes have been received from the following Breed Societies:—Shire Horse Society, Clydesdale Horse Society, Suffolk Horse Society, British Percheron Horse Society, Hunters' Improvement and National Light Horse Breeding Society, National Pony Society, Arab Horse Society, Hackney Horse Society, Welsh Pony and Cob Society, Shetland Pony Stud Book Society, Shorthorn Society, Dairy Shorthorn Association, Hereford Herd Book Society, South Devon Herd Book Society, Longhorn Cattle Society, Welsh Black Cattle Society, Red Poll Cattle Society, Park Cattle

Society, Aberdeen Angus Cattle Society, English Aberdeen Angus Cattle Association, Galloway Cattle Society, Ayrshire Cattle Herd Book Society, British Friesian Cattle Society, English Jersey Cattle Society, English Guernsey Cattle Society, British Goat Society, Oxford Down Sheep Breeders' Association, Shropshire Sheep Breeders' Association, Hampshire Down Sheep Breeders' Association, Suffolk Sheep Society, Dorset Horn Sheep Breeders' Association, Ryeland Flock Book Society, Kerry Hill (Wales) Flock Book Society, Society of Border Leicester Sheep Breeders, Lonk Sheep Breeders' Association, Kent or Romney Marsh Sheep Breeders' Association, Cotswold Sheep Society, South Devon Flock Book Association, Cheviot Sheep Society, Herdwick Sheep Breeders' Association, National Pig Breeders' Association, British Berkshire Society, Large Black Pig Society, Gloucestershire Old Spots Pig Society, Lincolnshire Curly Coated Pig Breeders' Association, Cumberland Pig Breeders' Association, Wessex Saddleback Pig Society, Essex Pig Society.

Challenge Cups are again offered for the best Suffolk Stallion, for the best Percheron Stallion, for the best Percheron Mare or Filly, for the best Riding Hunter, for the best Hack or Riding Pony, for the best Single Harness Horse, for the best Tandem, for the best Four-in-Hand Team, for the best group of Dairy Shorthorns, for the best animal in the South Devon Classes, for the best Longhorn Bull or Cow, for the best Longhorn Yearling Bull or Heifer, for the best Kerry animal, for the best Dexter animal, for the best Border Leicester Ram or Ewe, for the best Large White Pig, for the best Middle White Pig, for the best Tamworth Pig, for the most points awarded in a combination of entries in the Berkshire Pig Classes, for the best Large Black Sow, for the best Gloucestershire Old Spot, best Gloucestershire Old Spot Boar, best Gloucestershire Old Spot Sow, for the best Exhibit of Cider.

In the Poultry section Special and other Prizes are being contributed by the following Clubs:—Dorking Club, Black Wyandotte Club, White Orpington Club, Black Orpington Club, Indian Game Club, British Rhode Island Red Club, Blue Leghorn Club, Barred Plymouth Rock Club, Buff Plymouth Rock Club, Scots Dumpy Club, Belgian Bearded Bantam Club.

In the Rabbit section Special and other Prizes are being contributed by the following clubs:—National Belgian Hare Club, National Flemish Giant Club, National English Club, United Kingdom Dutch Club, Beveren Club, National Silver Club, Tan Club and National Polish Club.

In the Produce section Classes and Prizes will be provided for Butter, Cheeses made in 1921, Bottled Fruits and Cider.

Each breed Society which has expressed a desire for it will

again have a separate classification for the wool of its particular breed.

#### Future Shows.

15. Invitations have been accepted by the Council to hold the Annual Show at Cambridge in 1922, at Newcastle-on-Tyne in 1923, at Leicester in 1924, and at Chester in 1925.

#### **Trials of Agricultural Tractors and Ploughs.**

16. The trials of Agricultural Tractors and Ploughs, originally announced to take place in the Autumn of 1915 but postponed on account of the War, were carried out in conjunction with the Society of Motor Manufacturers and Traders on land at Scampton and Aisthorpe, near Lincoln from September 28 to October 7 last. The awards of the Judges are as below:—

Class 1.—Internal Combustion Direct Traction Engine not exceeding 24 H.P., suitable for ploughing 2 furrows, 10 inches wide by 6 inches deep.

1st Prize Gold Medal and £20, J. I. CASE THRESHING MACHINE CO. (The Case).

2nd Prize Bronze Medal and £10, H. G. BURFORD & CO. LTD. (The Cletrac).

Class 2.—Internal Combustion Direct Traction Engine not exceeding 30 H.P., suitable for ploughing 3 furrows, 10 inches wide by 6 inches deep.

1st Prize Gold Medal and £20, ANCONA MOTOR CO., LTD. (British Wallis).

2nd Prize Bronze Medal and £10, PETER BROTHERHOOD, LTD. (The Peterbro).

Class 3.—Internal Combustion Direct Traction Engine over 30 H.P., suitable for ploughing 4 furrows, 10 inches wide by 8 inches deep.

1st Prize Gold Medal and £20, JOHN LAUSON MANUFACTURING CO. (The Lauson).

2nd Prize Bronze Medal and £10. (Not awarded.)

Class 4.—Direct Traction Steam Engine Plant, suitable for ploughing 4 furrows, 10 inches wide by 8 inches deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize Gold Medal and £20, MANN'S PATENT STEAM CART & WAGON CO., LTD.

Class 5.—Internal Combustion Double Engine Set, with Wire Rope haulage for ploughing 3 or 4 furrows, 10 inches wide by 8 inches deep. Engines to comply with Light Road Locomotive Acts.

1st Prize Gold Medal and £20, JOHN FOWLER AND CO., (LEEDS), LTD.

*2nd Prize Bronze Medal and £10, J. & H. McLAREN, LTD.*  
 Class 6.—Double Steam Engine Set, with Wire Rope  
 haulage for ploughing 3 or 4 furrows, 10 inches wide by  
 8 inches deep. Engines to comply with the Light Road  
 Locomotive Acts.

*1st Prize Gold Medal and £20, JOHN FOWLER & Co. (LEEDS),  
 LTD.*

Class 7.—Self-Propelled Plough for ploughing not more  
 than 4 furrows of not more than 10 inches wide by not  
 more than 8 inches deep.

*1st Prize Gold Medal and £20, CRAWLEY AGRIMOTOR Co.,  
 LTD. (The Crawley).*

*2nd Prize Bronze Medal and £10, MOTRAC ENGINEERING,  
 LTD. (The Moline).*

The Report of the Judges is now in preparation, and will be  
 issued in due course.

#### Argentine Judges.

17. In response to a request from the Rural Society of  
 Argentina, the following gentlemen were appointed to act as  
 Judges of Stock at the Show held at Palermo in September  
 last :—

*Shorthorns*.—Mr. Thomas A. Buttar, Corston, Coupar Angus, N.B.  
 (Mr. Buttar also judged Down sheep); Mr. James Cameron,  
 Balnakyle, Munloch, N. B.; Mr. Charles A. Hirst, Crake Hall,  
 West Heslerton, York.

*Herefords*.—Mr. Robert W. Hall, Bidney, Leominster, Herefordshire.

*Aberdeen-Angus*.—Mr. James C. Booth, Downhills, Peterhead, N.B.  
*Lincoln and Long-woolled Sheep*.—Mr. Clifford Nicholson, Horkstow,  
 Barton-on-Humber.

Messrs. Buttar and Hall also officiated as Judges at the Monte  
 Video Show, at the request of the Rural Association of Uruguay.

#### Chemical Department.

18. The number of samples analysed for members of the  
 Society in 1920 was 420. The supply of both fertilisers and  
 feeding stuffs throughout the year has been limited, leaving to  
 purchasers but little choice in the matter of quality or price, and  
 they have had, as a rule, to take what they could get.

The chief feature of note as regards the samples sent has  
 been the use of Basic Slag of a lower quality than previously,  
 the high quality ones of former years being now very seldom  
 obtainable. Whereas Basic Slag containing as much as 40 per  
 cent. of phosphates was formerly procurable, the present  
 deliveries vary, as a rule, from 22 to 30 per cent. of phosphates.  
 It would seem, however, that these lower qualities have been  
 found to answer quite well in practice, though, when one has to

consider the high cost of carriage, it cannot be so economical to send the lower qualities any distance by rail. Samples of Potash Salts also have come forward to a considerable extent.

Another feature of interest is the increased attention that is now being given to the matter of Liming of land. This indicates a revival of an old practice, the leaving off of which has, in many cases, been very detrimental to the land.

Two issues of Occasional Notes (Nos. 8 and 9, February and June) were made, and, in the latter of these, a new feature was introduced in the inclusion of various questions which had been put to the Consulting Chemist by members, and the answers thereto.

A decided forward step in the direction of obtaining an amendment of the Fertilisers and Feeding Stuffs Act, or a new Act altogether, was taken by the Society, when it invited representatives of the County Councils Association, the Central Chamber of Agriculture, the Incorporated Society of Inspectors of Weights and Measures, and the Agricultural Analysts' Association, to meet in conference and to draw up suggestions for the amendment of the Act. The conclusions come to were laid before the Ministry of Agriculture, who received these very sympathetically, and it is hoped that, before long, some of them will bear fruit.

#### Woburn Experimental Station.

19. The usual continuous corn-growing, rotation and green-manuring experiments were continued, and further experiments on the use of Lime and Chalk were instituted on the field scale, thereby supplementing the observations made in the pot-culture experiments.

A feeding experiment with bullocks, on the use of Oil extracted Palm-nut Meal, was carried out at the suggestion of the Imperial Institute, and in conjunction with similar work at Wye College. The Oil-extracted Meal was not found to be of any use for either sheep or pigs, the former rejecting it altogether. For cattle it was found not to answer as well as undecorticated Cotton Cake, either in respect of live-weight gain or financial return.

At the Pot Culture Station, the Hills' experiments were concerned with the influence of compounds of Tin upon Wheat. Other experiments were upon the use of Chromium Salts, of Sulphur, and of different Silicates. Mr. James Crabtree, chemical assistant at the Pot Culture Station, gave up his post in March, having been appointed superintendent of Experimental Sugar-cane farms in British Guiana. His place has now been filled by Mr. A. Blenkinsop, formerly of Armstrong College, Newcastle-on-Tyne.

The Annual Visit of the Council to the Farm took place on July 28, but the Members' Visit had once more to be postponed on account of the difficulties of railway and other facilities.

**Botanical Department.**

20. The two most striking characteristics of the work in the Botanical department during 1920 were the demand for information about varieties of the cereal crops and for methods of coping with the weeds of arable land. A number of specimens of wheat and barley were received with the query whether, inasmuch as they differed from the bulk of the crop, they were evidence of the degeneration of some of the varieties introduced comparatively recently. Taken altogether the series formed an interesting commentary on the effective way in which threshing machines are contaminating crops, for, with one exception, these supposedly "reversionary" forms were well-known standard varieties.

Inquiries regarding fungoid pests of farm crops and fruit trees were of about the same order of frequency as in the previous year. An increase in the number of specimens of Apple Mildew probably points to the fact that this troublesome disease is increasing.

Early in the year the number of inquiries on the formation of permanent grass land threatened to be too numerous for the department to cope with individually, and a leaflet on the subject was issued giving instructions for the preparation of the land, the methods of sowing the seed, and the subsequent management of the fields, as well as prescribing seed mixtures suitable for various conditions.

As compared with the previous year the number of samples of seeds tested will probably prove about the same.

**Zoological Department.**

21. The work of the Zoological department has, as in former years, comprised the giving of advice in cases of insect attacks; the identification of zoological specimens, interesting for one reason or another; and research into obscure points in the life-history of pests. The insect attacks reported have involved a large number of insects and a wide variety of crops, but they have presented few features of general interest. The specimens sent for identification have included a considerable number of animal parasites, and of insects and arachnids infesting buildings and stored produce. In the research branch of the work, particular attention has been paid to the familiar corn pests, with regard to which many points are still obscure, and investigations at Cambridge have thrown some light on problems connected with frit-fly and wheat bulb-fly.

**Animal Diseases.**

22. The most regrettable feature in connection with the occurrence of the contagious diseases has been the large number of outbreaks of foot-and-mouth disease. During the first two months of the year there were no fewer than 39 outbreaks in 14 different counties, and in at least 10 of these the disease apparently had its origin in a fresh introduction of the virus from abroad. For a period of about six weeks, commencing on March 1, the country was again free from the disease, but independent outbreaks occurred in Norfolk and Kent in April, and were followed by others in Norfolk, the Isle of Ely, and East Sussex in June, and in Kent in September. The most serious extension of the disease occurred in Norfolk, in which 24 outbreaks occurred in June, July, and August.

23. There has been a notable increase in the outbreaks of anthrax since the beginning of the year, probably in consequence of increasing use of infected feeding stuffs of foreign origin. Glanders has nearly reached the point of extinction, and parasitic mange and swine fever have been less prevalent than in the previous year, but there has been an increase in the reported outbreaks of sheep scab. The facts with regard to rabies have been very disappointing. Up to the middle of April only four cases had been confirmed, and no case was recorded during the following four months. Towards the end of August three cases (probably ascribable to a fresh introduction of the disease from the Continent) were detected in Wiltshire, and 15 other cases occurred in that county and Glamorgan before the end of October.

24. During the year researches regarding abortion in cows and mares, and inflammation of the udder in cows, have been in progress at the Royal Veterinary College. In the ensuing year it is proposed to offer the assistance of the research staff to the owners of pedigree herds of any breed who wish to eradicate tuberculosis. Full particulars of the scheme can be obtained on application to the Principal of the College.

**Epizootic Abortion Order.**

25. Opinions having been strongly expressed to the Government that the exposure in a market of cows or heifers which have recently aborted, or the private sale of any such animal, without the purchaser being warned of the fact that the animal had aborted, should be made illegal, the Minister of Agriculture issued in January last an Order empowering local authorities to make regulations of this character applicable to their particular districts.

**Sheep Scab Order.**

26. A new Order, embodying a number of amendments of the Sheep Scab Orders of 1905 and 1910, has also been issued by the Ministry of Agriculture, with a view to improving and rendering more effective the administrative arrangements for dealing with the disease on premises on which sheep scab has appeared.

**Importation of Live Cattle.**

27. The Council have during the past year continued to protest against the importation into this country from abroad of any live cattle, except for slaughter at port of landing. Delegates from the Society attended a joint deputation which waited on Lord Lee on April 19 with regard to the importation of Friesian cattle from Canada.

**Medals for Cattle Pathology.**

28. In the competitive examinations conducted at the Royal Veterinary College for the Society's Medals for proficiency in Cattle Pathology, including the diseases of Cattle, Sheep, and Pigs, the Silver Medal was gained by Mr. L. Hughes, of "The Holt," Eynsham, Oxford, and the Bronze Medal by Mr. H. S. Robinson, of "Eversley," Maghull, near Liverpool.

**"Queen Victoria Gifts."**

29. The Trustees of the "Queen Victoria Gifts" Fund have made a grant of £140 for the year 1920 to the Royal Agricultural Benevolent Institution to be distributed as three gifts of £10 each in respect of male candidates, three gifts of £10 each in respect of married couples, and eight gifts of £10 each in respect of female candidates.

**National Diploma in Agriculture.**

30. As the result of the Twenty-first Annual Examination for the National Diploma in Agriculture held at the Leeds University from April 9 to 15 last, 35 candidates were successful in obtaining the Diploma, three with Honours.

**National Diploma in Dairying.**

31. The Twenty-fifth Annual Examination for the National Diploma in Dairying was held at the University College and British Dairy Institute, Reading, for English students, from September 10 to 18, and at the Dairy School, Kilmarnock, for Scottish students, from September 24 to October 2.

For the first time the Diploma "with Honours," was awarded to candidates obtaining not less than 80 per cent. of the maximum marks.



Fifty-eight candidates were examined at the English Centre, of whom 30 were successful—four reaching the Honours standard. At the Scottish Centre 32 candidates presented themselves, of whom 16 passed—six obtaining Honours.

#### **Emergency Committee.**

32. With the gradual removal of control from agricultural produce the work of the War Emergency Committee has necessitated only four meetings this year, and the Committee is henceforward to be known as the Emergency Committee.

A resolution was passed expressing the opinion that a continuance of the 1919 prices for wheat would lead to a great diminution in the food supply, and that nothing less than a price of 95s. per quarter, quoted by the Minister of Agriculture as the equivalent of 76s. per quarter based upon the cost of production in 1918, would arrest the decline in the cultivation of that cereal. It was subsequently announced by the Prime Minister that, so long as wheat was deprived of a free market, the controlled price of the 1920 crop should be the monthly average price of imported wheat, provided the price paid to the grower did not exceed 95s. per quarter.

In accordance with the recommendation of the Emergency Committee the Society has discontinued the nomination of representatives on the Agricultural Wages Board.

#### **Hickman v. R.A.S.E.**

33. An action brought by Mr. A. J. Hickman against the Society for damages for alleged wrongful dismissal from Membership and for reinstatement was heard in the High Court of Justice in July last by Mr. Justice A. T. Lawrence and a special jury. The hearing lasted three days, at the end of which a verdict was found for the Society. A formal notice of appeal has been served.

#### **Secretary's Resignation.**

34. At the close of the Council Meeting on November 3, the Chairman said he had a painful duty to perform, viz., to read a letter from the Secretary to Mr. Adeane, Chairman of the Finance Committee, announcing his resignation.

24th September, 1920.

DEAR MR. ADEANE.

For some considerable time I have felt that the increasing demands in connection with the office of Secretary of the Society have become somewhat exacting, and, whereas formerly the work was a pleasure, it has become a worry to me.

After forty-three years' service it might be supposed that I could not do so well as in my younger days, and the continued work, without a holiday since the outbreak of war, has undoubtedly been a strain.

In addition to this I am sorry to say that the blow on my head from the fallen telephone post in the motor car accident in Belgium has had more effect on me than I anticipated at the time.

Having regard to these matters, and to the fact that a Special Committee is now considering the affairs generally of the Society, I feel that it is an opportune moment for me to ask the Council to accept my resignation of the office it has been my privilege and pride to hold since 1906.

You will, I am sure, recognise that the work of the Society has very greatly increased during my term of office; and, however much I may regret the severance of my connection with this great Society, I feel that it is a duty I owe to the Council and to myself to make this application.

It has been a difficult task for me to write this letter, and I trust that you will recognise that during my long years of service I have worked hard to carry out the wishes of the Council, and for the members generally.

With much regret,

I remain,

Yours very truly,

(Signed) THOS. McROW.

Charles Adeane, Esq., C.B.,  
Hertford Street,  
Mayfair, W.

On the motion of the Chairman, it was unanimously resolved that the resignation be accepted with regret, and that the Finance Committee be authorised to make the necessary arrangements for the appointment of a successor, and also to settle the question of a pension to the retiring Secretary, who was fully entitled to one after his 43 years' service to the Society.

#### Agricultural Relief of Allies Committee.

35. The work of the Agricultural Relief of Allies Fund is nearing its conclusion, the Executive Committee having decided to close the Fund at the end of the present year. Since its establishment by the Royal Agricultural Society in 1915 there has been received in cash subscriptions about £198,000. Adding to this £10,645 as the value of gifts in kind made to the Committee, which the latter have shipped and distributed, £9,436 as the value of cattle sent on behalf of the Scottish Committee for Belgian Relief, and £7,000 as the cash value of small agricultural implements sent direct to the devastated regions by the Canadian branch of the Committee, there is a total of £225,079 as the full amount raised by the farmers of the British Empire on behalf of those in the war zone.

Of the £198,000 received by the Committee, £74,431 has been distributed in France, £53,264 in Belgium, £30,195 in Serbia and about £500 in Poland. There remains £39,066 still to be distributed, and of this the Committee have allocated £19,805 to Serbia, £2,236 to Belgium, and £15,000 to Roumania. Arrangements are in hand for the distribution of these sums.

During the past year there has been a remarkable manifestation of gratitude on the part of the Belgian recipients of the Committee's relief. In May the Governor and Provincial Council of Western Flanders invited the Duke of Portland, as President of the Fund, to attend a specially organised exhibition of some of the stock given by the Committee which was held in the historic Grand' Place of Ypres. At the show there were exhibited more than 300 animals given by the Committee, and all who saw them were impressed with the care which was evidently being bestowed upon them by their new owners, and recognised how important a part they must have played in the progress of the district towards agricultural recovery.

The Duke of Portland accepted, in the name of the Royal Agricultural Society and of the Committee, a splendid bronze bust of the King of the Belgians and an album containing the signatures of the majority of those who had received gifts of stock from the Committee. The Governor of Western Flanders also handed to His Grace the Grand Cordon of the Order of the Crown, which had been conferred upon the President of the Fund by His Majesty the King of the Belgians. The bust, together with the album accompanying it, have been presented to the Society by His Grace, and will form a permanent memorial of the part played by the Society in alleviating the misfortunes of the small farmers of our Belgian Allies.

The Duke of Portland and Mr. Adeane, the Honorary Treasurer of the Fund, have also paid a visit to the farms in the area of the Somme to which the Committee contributed live stock, and there again there was abundant evidence of the invaluable nature of the Committee's help, and especially of the timeliness of its arrival. Letters expressing the gratitude of the French agricultural population have been received from the President (Monsieur Millerand) and from the Préfets of the Departments in which help has been given, *i.e.* the Somme, the Aisne, the Oise and the Marne.

The Committee express their thanks to all whose who gave their support in any way to the Fund, and assure them that their help has been of the greatest practical value to the stricken peasants of our Allies.

By order of the Council,

THOMAS MCROW,

*Secretary.*

16, BEDFORD SQUARE,  
LONDON, W.C.1.

*November, 1920.*

## NATIONAL AGRICULTURAL EXAMINATION BOARD.

### I.—REPORT ON THE RESULTS OF THE TWENTY-FIRST EXAMINATION FOR THE NATIONAL DIPLOMA IN AGRICULTURE,

HELD AT LEEDS, APRIL 9 TO 15, 1920.

1. The Twenty-first Examination for the NATIONAL DIPLOMA IN AGRICULTURE was, by the courtesy of the authorities, held at the University of Leeds, from the 9th to the 15th April last.

2. The subjects of Examination were Practical Agriculture (two papers), Farm and Estate Engineering (including (a) Surveying and Farm Buildings, (b) Machinery and Implements), Agricultural Chemistry, Agricultural Botany, Agricultural Book-keeping, Agricultural Zoology, and Veterinary Science. Under the Regulations, the whole eight papers may be taken at one time, or a group of any three or four in one year and the remaining group of four or five in the year following. Candidates taking the whole Examination in one year who fail in not more than two subjects are allowed to take those subjects alone in the succeeding year. Candidates failing in a single subject of a group are permitted to take that subject again in conjunction with the second group.

3. One hundred and twenty-seven candidates presented themselves, as compared with 33 last year. Thirteen candidates took the whole Examination, 34 who had previously passed in certain subjects appeared for the remaining portion, and the other 80 candidates came up for a first group of subjects.

4. As the result of the Examination, 35 candidates were successful in obtaining the Diploma, *three with Honours*. In the list which follows the names of the candidates gaining Honours are given in order of merit, and those of the other Diploma-winners in alphabetical order:—

#### *Diploma, with Honours.*

1. WILLIAM CALDWELL, West of Scotland Agricultural College, Glasgow.
2. JAMES ANTONY MORE, East of Scotland Agricultural College, Edinburgh.
3. OLIVER CHANCE CASSELS, Harper-Adams Agricultural College, Newport, Salop.

*Diploma.*

MARGARET MABEL FARIE ANDERSON, West of Scotland Agricultural College, Glasgow.

FREDERICK THOMAS BENNETT, 110, Basingstoke Road, Reading.

FREDERICK CHRISTOPHER BOBBY, Harper-Adams Agricultural College, Newport, Salop.

ROBERT CRAWFORD RODGER BOYD, West of Scotland Agricultural College, Glasgow.

AMY MARGARET BRAITHWAITE, University College, Reading.

JAMES BULLOCH, West of Scotland Agricultural College, Glasgow.

LEWIS L. L. CAMERON, North of Scotland Agricultural College, Aberdeen.

GEOFFREY FLETCHER CLAY, Harris Institute, Preston.

HARRY SAMUEL CUTEBERTSON, Royal College of Science, Dublin.

JAMES FAIRWEATHER, North of Scotland Agricultural College, Aberdeen.

FLORENCE DOROTHY HAWES, University College, Reading.

DAVID HENDRY, West of Scotland Agricultural College, Glasgow.

WILLIAM FAIRBAIRN HESLING, Harper-Adams Agricultural College, Newport, Salop.

THOMAS HUNTER, West of Scotland Agricultural College, Glasgow.

JONIAN EDWARD FORWOOD JENKS, Harper-Adams Agricultural College, Newport, Salop.

DAVID PERCIVAL JOHNSTON, Royal College of Science, Dublin.

PERCY ALBERT KEEN, Harris Institute, Preston.

DOUGLAS MCHARDY, South-Eastern Agricultural College, Wye, Kent.

JOHN MORESBY MORESBY-WHITE, New College, Oxford.

THOMAS GOODALL MOUNTFORD, Harper-Adams Agricultural College, Newport, Salop.

BORLAND PITT, West of Scotland Agricultural College, Glasgow.

MARY SHUMLA RIDOUT, Harper-Adams Agricultural College, Newport, Salop.

ROGER SAYCE, Harris Institute, Preston, and University of Leeds.

WILLIAM RONALD SEWARD, South-Eastern Agricultural College, Wye, Kent.

THOMAS SHARVIN, Royal College of Science, Dublin.

THOMAS JOHN STEWART SMELLIE, West of Scotland Agricultural College, Glasgow.

DANIEL MURRAY SMILLIE, West of Scotland Agricultural College, Glasgow.

JAMES STEELE, West of Scotland Agricultural College, Glasgow.

ERNEST LEONARD TAYLOR, Harris Institute, Preston.

JAMES FRANCIS HERBERT THOMAS, University College, Reading.

JAMES L. TINDAL, JUNR., West of Scotland Agricultural College, Glasgow.

FREDERICK WHITTLE, Harris Institute, Preston.

5. Of the 80 candidates appearing for a first group of subjects, the 35 whose names are given below succeeded in passing, and are therefore entitled to take the remaining subjects at next year's examination, when, if successful, they will be awarded the diploma :—

ROBERT BARR, West of Scotland Agricultural College, Glasgow.

PHILIP S. BROWN, Harper-Adams Agricultural College, Newport, Salop.

IAN CAMPBELL, West of Scotland Agricultural College, Glasgow.

ULICK CASEY, University College, Galway.

- EDWARD G. CHAPMAN, Midland Agricultural and Dairy College, Sutton Bonington, Loughborough.
- PERBONELLE MARY CHEVALLIER, University College, Reading.
- RALPH A. COULTHURST, Midland Agricultural and Dairy College, Sutton Bonington.
- TRAYKO DAYITCH, Harper-Adams Agricultural College, Newport, Salop.
- ALEX. B. DICKSON, West of Scotland Agricultural College, Glasgow.
- LESLIE R. DOUGHTY, Midland Agricultural and Dairy College, Sutton Bonington.
- HERBERT C. DUCKER, South-Eastern Agricultural College, Wye, Kent.
- EDWARD FARQUHARSON, North of Scotland Agricultural College, Aberdeen.
- CHARLES K. FLINTOFF, Midland Agricultural and Dairy College, Sutton Bonington.
- JAMES FURNESS, JUNR., Midland Agricultural and Dairy College, Sutton Bonington.
- BRYCE B. GARVEN, West of Scotland Agricultural College, Glasgow.
- HERBERT E. GATTON, South-Eastern Agricultural College, Wye, Kent.
- REGINALD J. HAINES, Midland Agricultural and Dairy College, Sutton Bonington.
- JOHN S. KING, Midland Agricultural and Dairy College, Sutton Bonington.
- ALEX. R. LAMB, Midland Agricultural and Dairy College, Sutton Bonington.
- JOHN McEVoy, Royal College of Science, Dublin.
- ALEX. W. MCGOWAN, West of Scotland Agricultural College, Glasgow.
- HERBERT MARSLAND, Harris Institute, Preston.
- DORIS MELVILLE-JACKSON, South-Eastern Agricultural College, Wye, Kent.
- GERALD P. L. MILES, South-Eastern Agricultural College, Wye, Kent.
- GRAHAM MUNRO, West of Scotland Agricultural College, Glasgow.
- ANDREW W. PATERSON, West of Scotland Agricultural College, Glasgow.
- WILLIAM T. PRICE, University College, Reading.
- WILLIAM RIDDET, West of Scotland Agricultural College, Glasgow.
- CLIFFORD WM. ROBERTS, Midland Agricultural and Dairy College, Sutton Bonington.
- ROBERT M. S. ROUTLEDGE, University of Leeds.
- MILISAV TODOROVITCH, Harper-Adams Agricultural College, Newport, Salop.
- JOHN N. C. WEIR, West of Scotland Agricultural College, Glasgow.
- JOHN V. WHITELAW, West of Scotland Agricultural College, Glasgow.
- GEOFFREY M. P. WILLIAMS, Midland Agricultural and Dairy College, Sutton Bonington.
- ROBERT C. WOOD, University of Leeds.

Fifteen of the 45 unsuccessful candidates who sat for a group of three or four subjects failed in a single subject, which they will be permitted to take again next year in conjunction with the second group.

6. The Reports of the Examiners in the different subjects are appended:—

PRACTICAL AGRICULTURE. (First Paper, 300 Marks. Second Paper, 300 Marks.) Wm. Burkitt, B.Sc., J. G. Stewart, M.A., B.Sc., and Capt. J. A. Symon, D.S.O., M.A., B.Sc.

The written work was, on the whole, well done. The oral examinations, however, revealed a serious lack of practical knowledge on the part of many of the candidates.

Comparatively few farmers' sons attended the examination.

A considerable proportion of the candidates had acquired no practical experience before entering an Agricultural College, and, as a rule, had attempted to make good the deficiency by working on College or other farms during vacations. We are, however, strongly of opinion that intermittent spells of farm work are not sufficient preparation for an examination of this character.

In several cases there was distinct evidence of "cramming," and students appear to have neglected such opportunities as exist at Colleges for improving their practical knowledge. Judging by the answers to some of the questions, it would seem that more attention might with advantage be paid to modifications of farming practice necessitated by the changes due to the War.

**FARM AND ESTATE ENGINEERING.** (a) Surveying and Farm Buildings (150 Marks), Robert Cobb, F.S.I. (b) Machinery and Implements (150 Marks), Prof. R. Stanfield, M.Inst.C.E.

*Surveying and Farm Buildings* :—In my opinion the examination this year has shown in a marked degree to what a large extent the candidates depend on crammed knowledge rather than on any practical experience with the subject. In the *tria recta* examination, generally speaking, the manipulation of the theodolite and the reading of the level staff were lamentably weak; in fact, several of the candidates admitted that they had never seen a theodolite, and 50 per cent. of the failures in this subject was due to this defect. The theory and book knowledge were up to the average.

I was pleased to note, in view of the importance of the subject at the present time, and also in view of my report two years ago, that the subject of land drainage was better grasped.

*Machinery and Implements* :—Most of the candidates who presented themselves for examination this year appeared to possess a good practical knowledge of the principle of action and working of agricultural implements and the usual machinery connected with a farm. The answers in both the written and oral examinations, as a rule, indicated that the knowledge had not been obtained solely from text-books, but was the result of actual practical experience. In this respect the standard is much higher than I have noticed on former occasions, and it is gratifying to find that the candidates are now giving more attention to the machinery connected with farming operations. In questions involving calculations I find that the candidates rarely take the precaution to check their answers, with the result that errors were made—many of them being arithmetical—which would have been avoided by a simple check. In the oral examination I had occasion to ask some of the candidates questions involving an elementary knowledge of general chemistry, and I regret to find that very little attention appears to be given to this important subject.

**AGRICULTURAL CHEMISTRY.** (300 Marks.) Bernard Dyer, D.Sc., F.C.S., F.I.C., and J. Augustus Voelcker, M.A., B.Sc., Ph.D.

We have found it a somewhat difficult matter to arrive at a proper estimate of the capabilities of the different candidates. With the written answers there was no trouble, and these, as a whole, were of good average, and one or two especially good. On the paper-work it was only necessary to refer about one-sixth of the total number of candidates (62) for further consideration.

In the *tria recta* examination, however, it was very hard, largely owing to the fact that many of the candidates had taken an active part in the War, to discriminate between what had its basis in a good grounding in science but had to some extent been since forgotten, and what was merely acquired for the time being.

Especially hard was this task for examiners who had before them men who bore, in wounded limbs and shell-shocked frames, the marks of what they had gone through. In some cases men who had done quite fair papers failed altogether under *tria recta* examination: in other cases, just the reverse was shown.

But, as to those who had not gone through the War, it may be said generally that they did not show that satisfactory grounding in general chemistry which we think should have been apparent, and once more we have to express our doubts as to the value of the present substitute for the earlier examination (in Part I of this examination) in General Chemistry.

The written replies sent in were fairly distributed between the different questions set by us, and none of them seemed to give rise to any particular misunderstanding or difficulty, nor do they call now for special comment from us.

**AGRICULTURAL BOTANY.** (300 Marks.) R. Stewart MacDougall, M.A., D.Sc.

The majority of the candidates showed a good knowledge of the subject and most of them had at least a fair working acquaintance—as tested practically—with farm crop and weed plants and their seeds.

The average of the examination was quite satisfactory.

**AGRICULTURAL BOOK-KEEPING.** (200 Marks.) L. F. Foster, F.C.I.S., F.L.A.A.

On the whole, the papers submitted this year showed an improvement over those presented in 1919, and the percentage of failures was smaller in consequence. Many students passing in this subject failed in others. It is important, however, that such students should keep well in touch with the subject during the period intervening before the next examination.

There is a general lack of knowledge in this subject, and although the paper set was based almost entirely upon principles requiring such treatment as would obtain in practice, very few students were able to present the accounts in correct form. A thorough understanding of the question set as an exercise was not obtained in a great many cases, while the omission of the requisite opening entries—the basis upon which the accounts should have been built—resulted in altogether incorrect Profit and Loss Accounts and Balance Sheets.

From personal contact with many of the examinees, I am forced to the conclusion that this subject is not given sufficient prominence in their preparation. In very few cases had the candidates been taught by special teachers, and in the great majority of cases the subject appeared to have been taught by agricultural teachers possessing little or no practical knowledge of the subject. It is suggested that in view of its present-day importance the Colleges should consider the advisability of providing adequate teaching in the subject, because (1) the diploma carries with it a hallmark of efficiency, and (2) successful candidates are usually in a position to further the importance of the subject in their future work.

Quite 80 % of the candidates attempted the alternative question on Farm Costs, which was somewhat surprising. Very few were alive to the complexities of this branch of the subject and the principles involved, and it is probable that so many attempted the question not because they possessed any detailed knowledge of farm costs but by reason of the fact that it is a popular subject for discussion at the present time.

#### AGRICULTURAL ZOOLOGY. (200 Marks.) Cecil Warburton, M.A.

The candidates in this subject were much more numerous than last year—76 as against 18. Most were able to show a fair knowledge of the subject as far as it can be acquired from text books, and good answers were given to questions on such matters as the life-history of the liver fluke, or the relation of particular birds to agriculture. There was, however, very little evidence of field work, and the candidates who were able easily to recognise quite common insect pests or the injury done by them were far too few.

Sufficient attention had not been paid to insect larvae, and particularly to the types of larvæ characteristic of certain groups of insects of similar habit. For example, nearly all knew the general appearance of the grub of the cockchafer but were quite unaware that the whole group of Lamellicorn beetles have larvæ of the same type, often only to be distinguished by an expert.

#### VETERINARY SCIENCE. (200 Marks.) Professor Sir John McFadyean, M.B.

The general standard of knowledge exhibited by the candidates was not quite satisfactory and this applies especially to practical knowledge.

Many of the candidates appeared to be heavily handicapped in regard to questions on physiology by insufficient grounding in Chemistry.

7. The thanks of the Board are again due to the authorities of the University of Leeds, for their liberality and courtesy in placing the Large Hall and other rooms of the University at the Board's disposal for the Examination; and to the Examiners, for the care and attention they bestowed upon the written answers to the papers set, and upon the *viva voce* examination.

ERNEST MATHEWS, *Chairman*.

THOMAS MCROW, *Secretary*.

16 Bedford Square, London, W.C.1.  
May, 1920.

## II.—REPORT ON THE RESULTS OF THE TWENTY - FIFTH EXAMINATION FOR THE NATIONAL DIPLOMA IN DAIRYING, 1920.

1. The Twenty-fifth Annual Examination for the National Diploma in the Science and Practice of Dairying was held for English candidates at the University College and British Dairy



Institute, Reading, from September 10 to 18; and for Scottish candidates at the Dairy School for Scotland, Kilmarnock, from September 24 to October 2.

2. On the recommendation of the Examiners last year, the pass standard for the Diploma was raised for the 1920 Examination, and it was also decided to institute an "Honours" Diploma, to be awarded to candidates obtaining an aggregate of 80 per cent. (1,040) of the maximum marks (1,300) in the Examination, provided that they also obtained at least 80 per cent. (320) of the maximum marks (400) in the General Dairying and Cheese-making papers.

3. Fifty-eight candidates presented themselves at the English Centre. Of these, 4 reached the "Honours" standard, and 26 others were awarded the Diploma. Their names are as under:—

*Diploma with Honours.*

1. IRENE E. SMALE, University College and British Dairy Institute, Reading.
2. ANNIE SHEPPARD, Midland Agricultural and Dairy College, Kingston, Derby.
2. ELIZABETH MARJORIE SPURR, Midland Agricultural and Dairy College, Kingston, Derby.
4. CHARLES MONTAGUE SELBY, University College and British Dairy Institute, Reading.

*Diploma.*

EVELYN MURIEL ALLDAY, Midland Agricultural and Dairy College, Kingston, Derby.  
 MARGARET EDITH ANDREWS, University College and British Dairy Institute, Reading.  
 GRACE BOWDEN, University College and British Dairy Institute, Reading.  
 WINIFRED BRENNAN, University College and British Dairy Institute, Reading.  
 ESTHER BROADBENT, University College and British Dairy Institute, Reading.  
 EDITH BUCKNELL, University College and British Dairy Institute, Reading.  
 GLADYS LYNETTE CONNOLLY, University College and British Dairy Institute, Reading.  
 DORIS MARGARET CUMMING, Lancashire County Council Dairy School, Hutton, Preston, and British Dairy Institute, Reading.  
 TRAYKO DAYTCH, University College and British Dairy Institute, Reading.  
 ALICE EASTMAN, University College and British Dairy Institute, Reading.  
 EILEEN WILSON ERSKINE, University College and British Dairy Institute, Reading.  
 ANNIE HARRISON, University College and British Dairy Institute, Reading.  
 ANNIE DOROTHY JONES, University College, Aberystwyth, and British Dairy Institute, Reading.

HILDA ANNIE JONES, University College, Aberystwyth, and British Dairy Institute, Reading.

KATIE JONES, University College, Aberystwyth, and British Dairy Institute, Reading.

KATHLEEN L. LOMAX, Midland Agricultural and Dairy College, Kingston, Derby.

JESSIE MATTHEWS, Midland Agricultural and Dairy College, Kingston, Derby.

HELEN MARY HECTOR MORICE, The College, Studley, Warwickshire.

FRANCES ETHEL NEVILL, Midland Agricultural and Dairy College, Kingston, Derby.

AGNES SYBIL PRICE, University College, Aberystwyth, and British Dairy Institute, Reading.

KATHLEEN PRETCHARD, University College, and British Dairy Institute, Reading.

DOROTHY CLAYTON SMITH, University College and British Dairy Institute, Reading.

HERBERT WILLIAM TOMLINSON, University College and British Dairy Institute, Reading.

DONALD JOSEPH VAUX, University College and British Dairy Institute, Reading.

JESSIE H. WILLIAMS, University College and British Dairy Institute, Reading.

OLIVE WINDEBANK, University College and British Dairy Institute, Reading.

4. At the Scottish Centre \*, 32 candidates were examined. Six of these gained Honours, and 10 others the Diploma :—

*Diploma, with Honours.*

1. JAMES ANTONY MORE, East of Scotland College of Agriculture, Edinburgh.

2. { DANIEL MURRAY SMILLIE, West of Scotland Agricultural College, Glasgow.

{ GEOFFREY FLETCHER CLAY, Harris Institute, Preston.

4. JAMES LOVE TINDAL, JNR., West of Scotland Agricultural College, Glasgow.

5. ANDREW WILSON PATERSON, West of Scotland Agricultural College, Glasgow.

6. ELLA MARGARET MONIE, West of Scotland Agricultural College, Glasgow.

*Diploma.*

MARGARET MABEL FARIE ANDERSON, West of Scotland Agricultural College, Glasgow.

JOHN ARMOUR, West of Scotland Agricultural College Glasgow.

ALEXANDER BRUCE DICKSON, West of Scotland Agricultural College, Glasgow.

LEOPOLD A. LIVENTHAL, University College, Cardiff.

KATHERINE MCINNES, West of Scotland Agricultural College, Glasgow.

MILLICENT MOIR, North of Scotland College of Agriculture, Aberdeen.

CHARLOTTE REID, North of Scotland College of Agriculture, Aberdeen.

JAMES STEELE, West of Scotland Agricultural College, Glasgow.

DIANA YVONNE ELISE WATT, West of Scotland Agricultural College, Glasgow.

GWYNETH SARAH WILLIAMS, University College, Cardiff.

\* The candidates at the Scottish Centre had all been students at the Kilmarnock Dairy School.

5. The examiners at both Centres were :—John Gilchrist, F.S.I., (General Dairying, practical butter-making, and capacity for imparting instruction), John Benson (Cheese-making), and Dr. J. Augustus Voelcker, M.A., F.I.C. (Chemistry and Bacteriology).

6. In his report, Mr. Gilchrist states that “for the practical work of butter-making at Reading there were 52 candidates, and at Kilmarnock 27 candidates. These, with a few exceptions at Reading, carried out the work very creditably. At both centres the answers generally were given in a satisfactory manner, but a few of the papers showed that the candidates were unable to apply the knowledge they had gained to the practical work of a dairy farm. In my opinion, more care should be given by both teachers and students to this part of the training. I found the higher standard of pass marks fixed this year to be a distinct advantage, and I am glad to state that so many were able to obtain honours in the examination. At both centres the arrangements for conducting the examinations were admirable.”

7. Mr. Benson reports that “the results of the Examination in Cheese-making were this year very satisfactory, the standard of knowledge being higher than in recent years. In the *theory* of cheese-making many candidates did exceedingly well, but there were others who had not had sufficient training to enable them to obtain the diploma, especially now that the minimum marks for a pass have been raised. This year there were 58 candidates at the English centre, and the accommodation at Reading was taxed to its utmost. The work in my section was extremely arduous; and, in my opinion, if this examination is to be confined to reasonable limits and completed in one week, it will be advisable for those responsible for the training of candidates to have a preliminary examination at each training centre in order to eliminate those who have little chance of passing in all subjects.

“In *practical* cheese-making there was a general and decided improvement, and the bulk of the cheeses made were of excellent quality. The progress is greater in the *practice* than in the *theory* of cheese-making. The style of handling the milk was very good, and evidently most of the candidates had been well and carefully trained and must have had considerable experience. In the methods of making blue-veined cheese there was a very general improvement.

“The arrangements made at both centres for conducting the Examination were, as usual, excellent and complete, and the supply of milk ample and of good quality.”

8. "In the subject of Chemistry and Bacteriology at the English Examination a failure of 38 per cent."—Dr. Voelcker states—"would seem to imply that there is considerable scope for improvement in the preparation of the candidates. Yet it must be said that the number of 'utter failures,' or of candidates presenting themselves with but little chance of success was not large, and the majority of failures was of candidates whom a little more attention to the careful answering of the questions would have carried through. The wisdom of the regulation obliging those presenting themselves to have spent a certain time on a farm was shown in the generally good replies to questions having a bearing on practical farming. It would be well if a similar insistence were placed on the following of a practical laboratory course in chemistry, for several of those interrogated admitted that they had not even prepared hydrogen or other similar bodies. With a few exceptions of this kind, the replies generally were marked by an absence of incorrectness and a determination to set down only what was really known. At the Scottish Centre the work was, on the whole, very well done. The papers sent in comprised several of more than usual excellence, and these were, as a rule, followed up by a good  *viva voce*  examination. The failures amounted to nine only, and, among these, somewhat significantly, were all the five candidates entering for the written work only. One would have expected a year's preparation to have shown a better result. Of individual questions at the Kilmarnock Examination, the one that presented most difficulty was No. 5, several candidates evidently not understanding what was meant by the term 'morphology' as applied to micro-organisms. In no case either was a question referring to 'vitamines' fully or satisfactorily replied to."

ERNEST MATHEWS,  
*Chairman.*

THOMAS McROW,  
*Secretary,*  
16 Bedford Square, London, W.C.  
October, 1920.

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## ANNUAL REPORT FOR 1920 OF THE PRINCIPAL OF THE ROYAL VETERINARY COLLEGE.

### ANTHRAX.

THE number of confirmed outbreaks of this disease in each of the last seven years is shown in the following Table:—

Year		Outbreaks		Animals attacked
1914	..	722	..	796
1915	..	575	..	642
1916	..	571	..	687
1917	..	421	..	480
1918	..	245	..	282
1919	..	234	..	314
1920	..	459	..	547

The figures in the Table support the view that the great majority of the outbreaks of anthrax occurring in this country are caused by feeding with imported foreign cake, grain, or other feeding stuffs which are contaminated with the germs of the disease. So far as one can judge from the available information, this is the only country in which anthrax commonly arises in that way, and it is certain that in all the countries in which it is of common occurrence infection is generally the consequence of a more or less persistent local soil contamination. In every case of anthrax some bacilli escape from the body of the animal during life, and colossal numbers are liberated in any case in which the carcass is skinned or opened. This is the starting point of soil infection, but in countries with a warm climate the danger which it involves may be greatly increased by subsequent multiplication of the bacilli and formation of spores in the soil. Where the proper precautions in dealing with cases of anthrax are neglected or are impracticable (as in some foreign countries), wide ranges of pasture may become intensely dangerous for horses, cattle, or sheep; but, as has been pointed out in previous annual reports, the outbreaks in Great Britain have never been explainable on the supposition that they are the result of a local soil infection. Had that been the usual source of the disease the recent war would have left the number of cases of anthrax unaffected or at the most reduced in proportion to the reduction in the total number of animals. But, as will be seen from the Table, there was a sensible fall in the number of outbreaks in 1915 and 1916, and afterwards a

rapid fall, which by the end of 1918 had reduced the outbreaks to about one-third of the usual pre-war number. The disease reached its lowest ebb in the first half of 1919, but the outbreaks had begun to show an upward tendency in the latter half. In 1920 the outbreaks were nearly double those of the preceding year, and in another year they will probably reach the pre-war level.

#### GLANDERS.

The following Table shows the number of outbreaks of this disease and the number of animals attacked in each of the last seven years :—

Year	Outbreaks	Animals attacked
1914	97	288
1915	50	87
1916	47	117
1917	24	62
1918	34	98
1919	25	61
1920	15	22

The figures for the past year are a little disappointing, as, in view of the small number of outbreaks in 1919, there was reason to hope that another twelve months would see the end of the disease in this country. On the other hand, they are highly satisfactory when it is remembered that during the first seven years of the present century the annual outbreaks were always over 1,000, and that they numbered 162 in 1913. Unfortunately, owing to the comparative rarity of the disease during recent years, many horse-owners are not well acquainted with its symptoms or are apt to be caught off their guard with suspicious cases, and the fact that in many instances the disease is latent for a considerable period places further difficulty in the way of its complete eradication.

#### SHEEP SCAB.

The following Table shows the number of reported outbreaks for the past six years :—

Year	Outbreaks
1915	257
1916	381
1917	543
1918	351
1919	438
1920	479

The figures for the past year are unsatisfactory, as they show little improvement on the previous year, and an actual retrogression as compared with 1915 and 1916, even if the reduction in the sheep stock since the latter year is left out of account.

There can be no doubt that the failure of the measures hitherto employed to stamp out sheep scab has been in the first place due to non-reporting of cases of the disease, especially on the part of owners of infected flocks in Wales and the north of Scotland, and, in the second place, to the difficulty of discovering or tracing the existence of sheep scab in some of the large hill or mountain farms in Wales and Scotland.

It is satisfactory to find that by means of the new powers taken in the Sheep Scab Order of 1920 the Ministry of Agriculture proposes to make a special effort to deal with outbreaks of the disease in those counties which owing to their inaccessibility have remained nurseries of the disease. This order requires at least two dippings of all affected or suspected sheep to be carried out under the supervision of an inspector of the local authority, and any further dippings or treatment for sheep scab which such an inspector may consider necessary. There must be an interval of not less than 7, and not more than 14 days between the two dippings. This brings the procedure into harmony with the known facts regarding the life history of the sheep scab parasite, and it is a recognition of the fact that the disease cannot be cured by a single dipping. The compulsory general dipping of sheep, which has been in force in the whole of Great Britain since the year 1908, is now abandoned, and in future compulsory general double dipping will be confined to areas in which such a requirement is considered necessary for securing the complete eradication of sheep scab therefrom, or in which there is reason to suspect that the disease may exist unreported.

It is also proposed that in future a number of the Ministry's own staff of veterinary and other inspectors shall be detailed to co-operate with the local authorities concerned, with a view to securing the necessary measure of supervision of the dipping, advise owners as to methods of handling and dipping sheep, and to search the flocks for any obscure cases of scab which might escape detection.

#### SWINE FEVER.

The following Table shows the number of confirmed outbreaks of this disease during the last seven years :—

Year		Outbreaks
1914	..	4,356
1915	..	3,994
1916	..	4,331
1917	..	2,104
1918	..	1,407
1919	..	2,305
1920	..	1,816

The first year in the Table was the last complete year in which swine fever was dealt with under a plan that was ostensibly a stamping-out one, and involved the compulsory slaughter of diseased and in-contact pigs. This method was continued till September 1915, when the Board of Agriculture abandoned the attempt to eradicate the disease and resolved to be content with less drastic measures which might suffice to hold it in check. Compulsory slaughter was accordingly stopped, and owners were encouraged to employ serum inoculation to diminish the losses among the pigs that had been exposed to risk of infection. The figures for the last four years appear to indicate that the present method of dealing with the disease is effectual in holding it in check, although the reduction in the number of outbreaks is probably largely due to the marked decline in the pig population which occurred in 1917 and 1918 and to the diminished opportunities for infection in markets and fairs in recent years. At any rate it is obvious that serum as at present employed cannot have a direct effect in preventing new outbreaks, although it may act in that way indirectly by making owners less reluctant to report the existence of the disease.

A fact that must not be left out of account in considering the merits of the new method of dealing with the disease is that it involves a great saving to the public exchequer. During the past four years only 3,186 animals were slaughtered by order of the Ministry of Agriculture as diseased or exposed to infection, but in the four years 1911 to 1914 owners had to be compensated for over 140,000 pigs slaughtered for the same reasons.

#### FOOT AND MOUTH DISEASE.

During the past year 93 outbreaks of this disease occurred in England, a number that has been exceeded only once during the last 36 years, viz. : in 1892, in which the outbreaks numbered 95.



The outbreaks occurred in 22 counties, and their distribution in point of time is shown in the following Table:—

	Periods of four weeks												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Kent. . . . .	6	—	—	—	1	—	—	—	—	3	2	1	14
Durham . . . .	3	—	—	—	—	—	—	—	—	—	—	—	3
Dorset . . . .	1	—	—	—	—	—	—	—	—	—	—	—	1
Essex . . . . .	1	—	—	—	—	—	—	—	—	—	—	—	1
Hants . . . . .	1	—	—	—	—	—	—	—	—	—	—	—	1
Wilts . . . . .	3	4	—	—	—	—	—	—	—	—	—	—	7
Bedford . . . .	1	—	—	—	—	—	—	—	—	—	—	—	1
Lancaster . . .	1	1	—	—	—	—	—	—	—	—	—	—	2
Northumberland	1	—	—	—	—	—	—	—	—	—	—	—	1
Devon . . . . .	—	3	—	—	—	—	—	—	—	—	—	—	3
Flint . . . . .	—	1	—	—	—	—	—	—	—	—	—	—	1
Gloucester . .	—	1	—	—	—	—	—	—	—	—	—	—	4
Bycks . . . . .	—	2	2	—	—	—	—	—	—	—	—	—	4
Oxford . . . . .	—	4	2	—	—	—	—	—	—	—	—	—	6
Worcester . . .	—	—	1	—	—	—	—	—	—	—	—	—	1
Norfolk . . . .	—	—	—	2	—	7	12	4	1	—	—	—	26
Sussex, E.L. . .	—	—	—	—	—	3	—	—	2	—	—	—	5
Isle of Ely . .	—	—	—	—	—	1	—	—	—	—	—	—	1
Suffolk . . . .	—	—	—	—	—	—	—	—	—	—	1	—	1
Hereford . . . .	—	—	—	—	—	—	—	—	—	—	—	—	3
Salop . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	2
Lincoln . . . .	—	—	—	—	—	—	—	—	—	—	—	—	3
													93

The facts indicate that at least 20 of the outbreaks were the result of fresh introductions of the virus from abroad, the remainder being attributable to a spread of the infection from pre-existing outbreaks in the neighbourhood. It is understood that in spite of painstaking inquiry no clue to the origin of the inde-

pendent outbreaks was discovered. All the outbreaks were successfully dealt with by stamping-out measures, which during the year involved the slaughter of 11,373 animals as diseased or exposed to infection.

### RABIES.

Rabies was exterminated in the United Kingdom in 1902, and the country remained free from it during the following 15 years. It was re-introduced in 1918, in which year it was confined to Devon and Cornwall and 98 cases were confirmed. In the following year the cases rose to 150, and these were distributed in 14 different counties. During the past year 42 cases were confirmed, and their distribution is shown in the following Table :—

	Periods of four weeks													Total.
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Kent. . .	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Surrey . .	1	1	—	—	—	—	—	—	—	—	—	—	—	2
Essex . .	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Wilts . .	—	—	—	—	—	—	—	6	3	1	1	2	—	13
Glamorgan .	—	—	—	—	—	—	—	—	—	9	—	—	1	10
Berks . .	—	—	—	—	—	—	—	—	—	1	4	—	3	8
Dorset . .	—	—	—	—	—	—	—	—	—	—	1	3	—	4
Hants . .	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Middlesex .	—	—	—	—	—	—	—	—	—	—	—	—	1	1
														42

As will be seen from the Table, there was a period of over four months during which no case of the disease was detected, and there is reason to suspect that the series of cases which afterwards occurred in Wiltshire and Glamorgan was due to a fresh introduction of the virus, probably in a dog smuggled in from the Continent in order to avoid the prescribed period of quarantine.

## PARASITIC MANGE IN HORSES.

The incidence of this disease during the last four years is shown in the following Table :—

Year		Outbreaks		Animals attacked
1917	..	2,614	..	4,873
1918	..	4,463	..	8,377
1919	..	5,016	..	9,861
1920	..	3,564	..	3,812

The reduction in the number of outbreaks during the last year is so far satisfactory, but it does not furnish any ground for hope that the regulations now in force will suffice to stamp out the disease. It must be admitted that the drastic measures necessary to secure that result would at present cause more loss to horse owners than the disease.

## ABORTION IN MARES.

During the year the following cases of contagious abortion in mares came under notice :—

(1) An agglutination test of the blood of four mares in the same stud showed that one of them was infected. The history of the mares was not known at the time when the test was carried out, but it was subsequently learned that none of them had aborted, and that they were suspected because three of them had failed to breed for three successive years in spite of service by different stallions. The infected mare was one of these. The fourth mare had a full-term foal in 1920, and this was her first foal although she had been served in each of the four previous years.

The fact that the blood test indicated infection of only one of the four mares makes it improbable that the trouble in getting them to breed was attributable to the bacillus of mare abortion, and no clue to the infection of the only mare incriminated by the blood test was obtainable.

(2) In the month of March blood was sent to the Laboratory from two mares that had aborted, one seventeen days and the other three days previously. A third mare had aborted on the day on which the blood was taken from these two mares, but blood was not sent from her. The result of the agglutination test was positive, indicating that the outbreak was caused by the bacillus abortivo-equinus.

There remained in the stud three mares carrying foals, and serum was sent for these. One of them aborted a week later, and the above-named bacillus was cultivated from the body of the foal. Subsequently inquiry elicited the fact that three years previously the same owner had twenty-two mares in foal,

and that every one of them aborted. The abortions began in December, 1916, and the last occurred in mares near the normal date for foaling in 1917.

None of these mares was served until 1918, and in 1919 all the foals were carried to full term. Two of the mares that aborted in 1920 were among those that aborted in the previous outbreak.

The first outbreak was attributed by the owner to Argentine mares that were kept for some time on his premises in 1916. During the six months preceding the 1920 outbreak only one mare had been brought on the farm, viz., in February, and that mare carried her foal to full term. She had been at grass with one of the mares that aborted, but never in contact with the others.

(3) In the foaling season, 1920, four brood mares out of ten belonging to the same owner aborted, and the foals of two other mares died soon after birth. The facts were reported at the end of the season, and blood was obtained from three of the mares that had aborted. The agglutination test with the *B. abortivo-equinus* had a positive result in each case. No facts bearing on the origin of the infection were obtained.

(4) The carcass of a foal that had been born dead on May 3 was forwarded to the Laboratory, where examination showed that it contained large numbers of an organism belonging apparently to the colon group of bacilli. The *bacillus abortivo-equinus* was not detected. It was subsequently ascertained that in the stud from which the foal came five mares had given birth to dead foals between April 9 and May 3, and two had had live foals. Three of the dead foals were said to have been overdue, and the others were only slightly if at all premature. Each of these mares had foaled normally the previous season, and no new mare had been brought on to the farm during the previous four months.

It has been thought well to give the foregoing particulars, not because they add anything to what was previously known regarding the causes of abortion in mares, but in order to emphasise the fact that when an owner allows an outbreak of abortion to run its course among his mares without taking any steps to arrest it he displays less intelligence than might be expected of him. Many outbreaks might undoubtedly be cut short if every case of abortion in a stud were regarded as of the contagious kind until the contrary has been proved by bacteriological examination of the fetus or an agglutination test of the mare's blood. Needless to say, in the interval every possible precaution to prevent the conveyance of infection to other mares in the stud should be taken. Members of the Society are reminded that the College

invites application for assistance and advice when a case of abortion occurs.

#### TUBERCULOSIS.

A reproach against owners of cattle in this country is that practically nothing has yet been accomplished in reducing the prevalence of tuberculosis. The number of herds from which the disease has been eradicated is insignificant, and it appears to be probable that the proportion of infected cows in the country remains at not less than 30 per cent. This very fact makes the complete extermination of bovine tuberculosis within any measurable period almost hopeless, but it is certain that many herds might soon be completely freed from the disease with profit to the owners. There is reason to suspect that some of the failures to achieve this object have been due to insufficient knowledge regarding the best method of employing tuberculin for diagnosis, and it is therefore proposed to offer the free assistance of the Research Department of the College, including the necessary tuberculin, to the owner of any pedigree herd who will agree to carry out, as far as may be practicable, the measures recommended with a view to stamping out the disease. As an encouragement to efforts of this kind, the College will when satisfied that any herd has been made actually free from the disease issue a certificate to that effect and authorise its publication.

#### INFLAMMATION OF THE UDDER IN COWS.

In the last Annual Report it was intimated that it was intended to institute an inquiry with regard to the cause and treatment of cases of so-called "garget" in cows, and Members of the Society in whose herds the trouble was occurring were invited to communicate with the College. During the year only a small number of outbreaks were reported, but one of those was of a very serious character. Unfortunately, it had spread extensively in the herd before advice was sought. The inquiry is being continued.

J. McFADYEAN.

Royal Veterinary College,  
London, N.W.1.

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## ANNUAL REPORT FOR 1920 OF THE CONSULTING CHEMIST.

DURING the twelve months, December 1, 1919, to November 30, 1920, 429 samples, or ten in excess of the 419 sent in the corresponding period of the previous year, were forwarded to me by members of the Society for analysis. In addition to these, there were the usual analyses of Cider and Milk in connection with the competitions at the Society's Country Show at Darlington.

The list of samples shows an increase more particularly in regard to linseed cake, cotton cake, basic slag, and soils, no fewer than 56 samples of soil having been forwarded, as against 38 in 1919.

Supplies of feeding stuffs were not by any means plentiful or easily procurable; still, there was hardly the same scarcity as in the previous year. Prices, too, have fallen somewhat, more particularly towards the close of the year.

In respect to fertilisers, there was perhaps not the same difficulty, although both basic slag and superphosphate were hard to procure. Further, a purchaser had but little choice in regard to quality, but had to take what he could get. The qualities of deliveries of basic slag have undergone considerable deterioration of late years, for, whereas, previously, it was quite possible to get deliveries testing 40-45 per cent. of phosphate of lime, it is seldom now that one can get any of even 30 per cent., while the more general average is 20-22 per cent. Even lower qualities—10-16 per cent.—are, not unfrequently, the only ones available. At the same time it is well to remark that, so far as one can judge from experience on the land with these lower qualities, they have answered perfectly well, so that the use of basic slag need not be given up even when only low quality lots are procurable. Of course, where the questions of carriage and of larger quantity required to be used come in, these render the lower qualities not so economical. The fact that the prices of basic slag and of sulphate of ammonia are practically fixed ones, has eliminated any element of competition in these materials.

The prices of other fertilisers have not greatly varied throughout the year, and I have not found it necessary to propose any further alteration in the Tables of Unexhausted Manure Value, as last revised in March, 1920.

Considerably increased attention has been very properly directed to the liming of land, and, in the case of many of the soils which I examined, I found that the need of liming was markedly demonstrated.

On the whole, I must say that cases of adulteration have been fewer than in previous years. The existence of the Fertilisers and Feeding Stuffs Act has, no doubt, acted as a deterrent. At the same time it is recognised that this Act is far from being what it should be. Cases of prosecution that have arisen regarding it have been particularly few, and, in many parts of the country, the authorities have undoubtedly lost heart in putting the Act into operation, partly because of the difficulty of complying with the strict formalities required, and partly because of the difficulty in getting the Ministry's consent to cases in which the local authorities have wished to prosecute. A decided step forward in the way of making the Act more really useful was taken by the Royal Agricultural Society early in 1920. The Society invited representatives of the County Councils Association, the Central Chamber of Agriculture, The Incorporated Society of Inspectors of Weights and Measures, and the Agricultural Analysts' Association, to meet and to consider the position as regards the administration of the Fertilisers and Feeding Stuffs Act. This conference proved very useful, and the members readily came to a clear understanding as to what were the points in which an amendment of the Act was required, or—as seemed to them more advisable—the lines upon which a new Act altogether should be drawn up. These representations were put into form and submitted to the Ministry of Agriculture, and the outcome was that representatives of the above bodies were invited to meet Sir Lawrence Weaver and other officials of the Ministry. At this meeting the matter was gone into very fully, and the various representations made were very sympathetically received. It is to be hoped that definite action will be taken before long by the Ministry, in the direction of introducing a new and improved Act.

During the year, two issues of "Occasional Notes," namely Nos. 8 and 9, in February and June respectively, were made. These, as usual, contained information of considerable value to purchasers of fertilisers and feeding stuffs, and, in the June number, a new item was added in the form of "Queries and Answers," on matters which had been submitted to me as Consulting Chemist of the Society. It will be a matter of great regret, I feel sure, to many members, to hear that the issue of "Occasional Notes" is, on the ground of economy, to be discontinued in the future. The many communications I have received have afforded ample testimony to the appreciation with which these periodical issues—filling, as they do, the blank between the yearly issue of the *Journal*—have been received by members generally. It appears to me an unfortunate step to give up useful work of this kind at such a period.

### A. FEEDING STUFFS.

The fall in the price of linseed cake has, no doubt, been accountable for the more extensive employment of this class of cake. Starting with £25 a ton, the prices have gradually gone down to as little as £18 12s. 6d. As a rule, also, the quality has been good, and the cakes pure. Cotton cake has not undergone a great fall of price, but has varied from £14 to £12 15s. per ton. Decorticated cotton cake and meal have been of varied quality and price, and, as noted in No. 8 of "Occasional Notes," there has been a marked deterioration in it, the distinctions which should exist between "decorticated" and "undecorticated" cakes and meals being now very indefinite. Earth-nut cake has, perhaps, been one of the most useful, and, at the same time, most economical of all feeding cakes. Its price has varied from £18 to £16 per ton. Palm-nut and coco-nut continue to come forward, both as cakes and meals, though the use of these does not appear to have largely extended; nor does the oil-extracted palm-nut meal seem to be generally favoured. Experiments conducted with it at the Woburn Experimental Farm, in conjunction with others simultaneously carried on at Wye College, do not show favourably for this oil-extracted meal as a food for cattle, as against cotton cake. Sheep, moreover, refused it altogether, and pigs did not thrive at all upon it.

Towards the end of the year, maize and beans experienced a marked fall in price which brought these, and the various products derived from them, into more general use. On the other hand, wheat offals generally became dearer and scarcer, the prices ranging from £13 10s. per ton, early in the year, to £16 towards the close.

#### 1. *Linseed Cake.*

Though purchases have generally been of good quality and the cakes pure, cases have occasionally occurred to the contrary. Such is the following:—

Moisture . . . . .	8.89
Oil . . . . .	11.16
<sup>1</sup> Albuminous compounds . . . . .	29.25
Mucilage, sugar, and digestible fibre . . . . .	31.15
Woody fibre (cellulose) . . . . .	8.39
<sup>2</sup> Mineral matter (ash) . . . . .	11.16
	<hr/>
	100.00
	<hr/>
<sup>1</sup> containing nitrogen . . . . .	4.68
<sup>2</sup> including sand . . . . .	4.49

This was a cake purchased, in December, 1919, of an Agricultural Trading Society in the South of England, the price being £25 per ton. The amount of sand is very high.



In a second instance, which is reported in full in "Occasional Notes," No. 9 (June, 1920), two tons of Plate linseed cake, sold at £22 15s. per ton, were found to contain a considerable amount of castor oil bean. As a consequence of taking this cake, a number of bullocks, to which it had been given, suffered seriously. Ultimately an allowance of £132 6s. was made by the vendors, who, it turned out, had obtained the cake through Government agents, and they were, in their turn, compensated by the latter.

## 2. *Decorticated Cotton Cake.*

A fair sample gave the following analysis :—

Moisture . . . . .	10.58
Oil . . . . .	8.66
<sup>1</sup> Albuminous compounds . . . . .	34.62
Carbohydrates, &c. . . . .	32.40
Woody fibre (cellulose) . . . . .	7.82
<sup>2</sup> Mineral matter (ash) . . . . .	5.92
	<hr/> 100.00
<sup>1</sup> containing nitrogen . . . . .	5.54
<sup>2</sup> including sand . . . . .	.36

This cost, in December, 1919, in the eastern counties, £21 15s. per ton only, carriage paid. This price was considerably below the then ruling one of £25 10s. per ton, and the cake was also better than usual, containing a comparatively low amount of fibre.

On the other hand, the following two cakes, though sold as "Decorticated," were really little better than ordinary undecorticated cake.

	A	B
Moisture . . . . .	12.17 ..	9.92
Oil . . . . .	5.86 ..	6.69
<sup>1</sup> Albuminous compounds . . . . .	24.37 ..	33.43
Carbohydrates, &c. . . . .	31.07 ..	32.40
Woody fibre (cellulose) . . . . .	21.54 ..	12.92
<sup>2</sup> Mineral matter (ash) . . . . .	4.99 ..	4.64
	<hr/> 100.00	<hr/> 100.00
<sup>1</sup> containing nitrogen . . . . .	3.90 ..	5.35
<sup>2</sup> including sand . . . . .	.19 ..	.06

"A" cost £22 5s. per ton, and "B" £21 10s. per ton, the price for decorticated cotton cake being then £19 per ton only. B was called "Peruvian" Cotton Cake.

## 3. *Coco-nut Meal.*

In one instance this was sold as a meal for pigs, and cost

£9 10s. per ton. It proved to be oil-extracted coco-nut meal, and was very insipid in taste. It gave on analysis:—

	Per cent.
Oil . . . . .	1.79
Albuminoids . . . . .	22.00
Carbohydrates . . . . .	45.38

#### 4. Feeding Meals.

Moisture . . . . .	12.19
Oil . . . . .	5.82
<sup>1</sup> Albuminous compounds . . . . .	36.62
Carbohydrates, &c. . . . .	21.03
Woody fibre (cellulose) . . . . .	12.12
<sup>2</sup> Mineral matter (ash) . . . . .	12.22
	<hr/> 100.00

<sup>1</sup> containing nitrogen . . . . .	5.86
<sup>2</sup> including sand . . . . .	.69

This meal was offered at the price of £26 per ton, under the name of "Milk Springer Meal," and was said to have the property of doubling the yield and quality of the milk. The analysis reads quite well, the material being especially high in albuminoids. It possessed, however, a bitter taste, which, I found on examination, to be derived from hops and yeast refuse which had been used in the making up of the meal. I should call the price of this distinctly high.

#### 5. Brewing Products.

	A Dried Distillers' Grains	B Distillery Waste	C "Cerammeal"
Moisture . . . . .	11.35	67.44	13.18
Oil . . . . .	4.86	2.26	.66
Albuminoids . . . . .	15.56	20.81	38.93
<sup>1</sup> Carbohydrates, &c. . . . .	50.93	6.44	39.21
Woody fibre . . . . .	13.38	2.89	—
<sup>2</sup> Mineral matter . . . . .	3.92	.16	8.02
	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00

<sup>1</sup> containing nitrogen . . . . .	2.49	3.17	6.23
<sup>2</sup> including sand . . . . .	2.76	—	.06

A was not a good sample, and did not compare at all well with dried grains as generally sold. The sample contained a good deal of unaltered starch and also barley husk which had not undergone any treatment. A good sample of dried distillers' grains should contain more like 10 per cent. oil and 28 per cent. albuminoids. The material possessed very little aroma.

B cost 45s. per ton on rail in London. It was very wet, but not at all acid. The price perhaps is not excessive, but it would not stand the paying of carriage to any extent. This was intended as a food for pigs, but, inasmuch as the starch was

mainly removed, I should not consider it to be suitable by itself, but a substance that would require supplementing with other material more of carbohydrate nature.

C cost £16 per ton, carriage paid, and appeared to be, practically, dried yeast.

#### 6. *Miscellaneous Feeding Materials.*

	A Oat Pollards	B Coffee Waste	C "Fenugreek"
Moisture . . . . .	10.55	6.62	10.70
Oil . . . . .	1.40	20.13	4.55
<sup>1</sup> Albuminoids . . . . .	12.18	13.93	22.87
Carbohydrates, &c. . . . .	41.84	29.60	49.56
Woody fibre . . . . .	18.46	23.63	7.11
<sup>2</sup> Mineral matter . . . . .	15.87	6.09	5.21
	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00
<sup>1</sup> containing nitrogen . . . . .	1.95	2.23	3.66
<sup>2</sup> including sand and silica . . . . .	11.28	.33	1.09

A. The description "Oat Pollards" was a misnomer, for the material contained very little oats, and was just sweepings or screenings. It consisted of chaff, a little wheat, oats, and a quantity of weed seeds, among which were polygonum and wild mustard.

The analysis shows the material to have also a great deal of siliceous matter, and it certainly was not worth getting at the price of £6 10s., at which it was sold in the eastern counties.

B. This was the skin or "parchment" of the coffee berry, together with some bits of coffee and fatty extract from the berries. Although it was proposed to use it for pigs, I do not fancy it for the purpose, because of its being poor in carbohydrates and not being a readily-digested material.

C. I do not remember having previously put out an analysis of Fenugreek, and this may, accordingly, be of interest.

#### 7. *Mangels.*

A member sent me six roots of a variety of mangels. This variety was supposed to be of specially good quality, and was stated, in an accompanying circular, to give as much as 12 per cent. of sugar. My analysis of the roots was, however:—

Water . . . . .	90.99
Albuminoids . . . . .	.94
Sugar . . . . .	3.42
Other soluble carbohydrates . . . . .	1.76
Crude fibre . . . . .	2.10
Mineral matter . . . . .	.79
	<hr/> 100.00
Nitrogen . . . . .	.15

The mangels, accordingly, instead of being very high in sugar, were just the reverse.

#### 8. Jerusalem Artichokes as a Fodder Crop.

A member having grown Jerusalem artichokes on his land, and intending to make this into silage, if it were at all suitable, sent me some of the stalks and leaves in order that I might make an analysis of them. I thought it advisable to exclude the thick stems, as these would hardly be capable of utilising for feeding. The analysis, accordingly, was made from the leaves and the thin stalks only, and it gave the following results:—

	A In natural state	B Dried at 100° C.
Moisture . . . . .	76.58 ..	—
Ether extract . . . . .	.19 ..	.82
<sup>1</sup> Albuminous compounds . . . . .	3.57 ..	15.25
Carbohydrates, digestible fibre, &c. . . . .	13.21 ..	56.33
Woody fibre . . . . .	3.84 ..	16.42
<sup>2</sup> Mineral matter . . . . .	2.61 ..	11.18
	100.00 ..	100.00
<sup>1</sup> containing nitrogen . . . . .	.57 ..	2.44
<sup>2</sup> including sand. . . . .	.09 ..	.40

As far as one can judge, a material such as this ought to be a distinctly useful one for silage purposes, especially when bearing in mind what a heavy cropper the Jerusalem artichoke is.

#### B. FERTILISERS.

Superphosphate has been somewhat hard to procure. The price of it also has risen to some extent. The quality generally procurable now is 30 per cent. "soluble phosphate." The particular features concerning the sale of basic slag have already been touched upon.

Of other phosphatic materials, bones have been rather cheaper, and fish manure has hardly been in evidence. The price of raw bone meal, which was £18 10s. or more per ton at the beginning of the year, has gone down to £16, but both this and fish meal are still relatively dear.

Among *nitrogenous manures* comparatively little has been heard of nitrate of lime, nitrate of ammonia or even cyanamide. Sulphate of ammonia continues to be the most generally used of the nitrogenous materials. Its price has fluctuated between £22 and £24 13s. 6d. per ton, while nitrate of soda, which was, in the earlier part of the year, £26 12s. per ton, has come down markedly in price to £21 10s.

Supplies of potash salts have come forward, and have been used to a more considerable extent. These have come mainly

from the Alsace-Lorraine deposits, the deliveries available being generally sold on a basis of containing either 14 per cent. of potash, 20 per cent. or 30 per cent. The revival of the imports of potash salts has led to the dropping off, to a considerable extent, of flue dust as a source of potash supply. This material was never very popular, and the results obtained with it have generally been of an uncertain nature.

There has been a considerable demand for lime of different kinds, and along with this has gone a raising of the price, which now reaches 58s. per ton for good burnt lime. There has been some disposition to try carbonate of lime as a source of lime supply, and it would certainly appear desirable to obtain, by practical experiments, more information as to the value of this, and of burnt lime, as also of magnesian lime and magnesian limestone.

#### 1. *Ground Mineral Phosphates.*

These have, in not a few cases, been tried, and among them is the following, known as "Ephos Phosphate":—

Moisture . . . . .	1.94
Water of combination . . . . .	1.94
<sup>1</sup> Phosphoric acid . . . . .	28.84
Lime . . . . .	46.26
Carbonic acid, etc. . . . .	15.86
Sand . . . . .	5.16
	<hr/> 100.00

<sup>1</sup> equal to tribasic phosphate of lime . . . . . 65.01

The price of the above was £15 per ton, which, in comparison with basic slag, reads decidedly high.

#### 2. *Lime.*

The following are analyses of two samples of lime—both of them of low grade.

	A	B
Oxide of iron and alumina . . . . .	6.64 ..	16.80
Lime . . . . .	63.94 ..	47.42
Magnesia . . . . .	2.06 ..	17.76
Silica . . . . .	15.48 ..	13.81
Water, carbonic acid, &c. . . . .	11.88 ..	4.21
	<hr/> 100.00 ..	<hr/> 100.00

A contained only 64 per cent. of lime and was, to a large extent, "slaked." It cost 48s. per ton.

B, while having less than 50 per cent. of lime, contained also a considerable amount of magnesia and of silica. It cost 65s. per ton, which made it, as compared with good ground lime (then quoted at 62s. per ton delivered), decidedly dear.

### 3. Carbonate of Lime.

	A	B
Moisture, water of combination, &c..	83 ..	12.08
Oxide of iron and alumina . . . .	1.08 ..	.35
Carbonate of lime . . . . .	96.15 ..	85.26
Magnesia . . . . .	.56 ..	1.47
Silica . . . . .	1.38 ..	.84
	<hr/>	<hr/>
	100.00 ..	100.00
	<hr/>	<hr/>
Lime . . . . .	53.84	47.74

A cost 25s. per ton on rail, and was a decidedly good sample.

B was a refuse lime, obtained in water-softening operations, and was sold as "Precipitated Chalk." It cost £5 per ton. Such a material, although it was good and very finely powdered, is, of course, too expensive for agricultural use. I ascertained that carbonate of lime recovered in this way may often give as much as 99 per cent. of carbonate of lime, and is used as "precipitated chalk" for pharmaceutical purposes, &c., often fetching as much as £10-£12 per ton.

### 4. Compound Manure.

A fertiliser under the name of "Compo-Lactic Fertiliser" was sent to me by a member. It cost £11 per ton and was used as a fertiliser for fruit trees and vegetables. The analysis was as follows:—

Moisture . . . . .	15.23
Organic matter . . . . .	76.46
<sup>1</sup> Phosphoric acid . . . . .	3.04
Lime . . . . .	3.36
Alkalies, &c. . . . .	1.51
Sand . . . . .	.40
	<hr/>
	100.00
	<hr/>
Nitrogen . . . . .	11.39
equal to ammonia . . . . .	13.85
<sup>1</sup> equal to tribasic phosphate of lime . . . . .	6.64

The manure was quite a good one and the price was not out of the way.

5. *Sud Cake.*

	A	B
Water . . . . .	20.54 ..	34.62
Fat . . . . .	7.73 )	24.87
Other organic matters . . . . .	41.90 j	
Oxide of iron, &c. . . . .	8.80 ..	6.93
Sand . . . . .	21.03 ..	33.58
	<hr/> 100.00 ..	<hr/> 100.00
Nitrogen . . . . .	3.16 ..	2.04
equal to ammonia . . . . .	3.84 ..	2.48

A. This cost 45s. per ton, f.o.r., and was called "degreased." The analysis, however, shows that it was far from being "degreased." The price, with carriage also added, made it rather dear.

B was sold as "Ground Sud Cake," and cost 55s. delivered in Lincolnshire. According to the analysis it was dear at the price, and was inferior to A. The purchaser informed me that no guarantee was given him, and the following statement accompanied the invoice:—

"This material is not sold by us as a fertiliser of the soil. But, for protective purposes, we declare that it contains 1.0 per cent. Nitrogen."

Such a statement as this is an evasion of the Fertilisers and Feeding Stuffs Act, and, in an amendment of the Act, steps should be taken to prevent the use of such misleading statements.

6. *Potash Materials.*

	A Cotton Seed Ash Per cent.	B Flue Dust Per cent.
Phosphoric acid . . . . .	25.73 ..	—
equal to phosphate of lime . . . . .	56.22 ..	—
Potash . . . . .	20.69 ..	14.28
equal to sulphate of potash . . . . .	38.29 ..	26.43
Lime . . . . .	7.15 ..	—
Silica . . . . .	10.98 ..	21.70

A was a material costing £22 10s. per ton, and was stated to be the ash from cotton seed after using the same for fuel in the East. The material was a very concentrated one, and might well be used with more bulky and poorer materials so as to dilute it, for it contains more potash than would ordinarily be needed for agricultural crops. The price could hardly be called excessive.

B was a better sample than usual, and not at all dear at the price charged, namely, 80s. per ton.

### 7. German Salt.

This was stated to be salt used by fish curers at Yarmouth and to have come from Germany. It was sent to me in the expectation of its possibly containing some potash, and this, as the analysis shows, proved to be the case, and made the price charged, namely, 45s. per ton, quite reasonable.

Moisture . . . . .	1.71
Sulphate of lime . . . . .	4.10
Sulphate of magnesia . . . . .	.34
Chloride of magnesium . . . . .	.38
Chloride of sodium . . . . .	88.96
<sup>1</sup> Chloride of potassium . . . . .	4.49
Sand . . . . .	.02
	<hr/>
	100.00
<sup>1</sup> containing potash . . . . .	2.84

### 8. Soot.

This continues to be of variable quality. The following is the analysis of a quite good sample, though it was rather damp.

Moisture . . . . .	36.58
Organic matter and salts of ammonia. . . . .	49.16
Oxide of iron, &c. . . . .	6.64
Sand . . . . .	7.62
	<hr/>
	100.00
Nitrogen . . . . .	3.11
equal to ammonia . . . . .	3.78

The price of this was £5 10s. on rail, which must be considered rather high for a sample containing so much moisture.

## C. MISCELLANEOUS.

### Soil needing Liming.

A member of the Society living in Warwickshire sent me a sample of soil from a field which had been in turf and had been ploughed up in February, 1918, by order of the Government. It was planted with oats in the spring of 1918, but the crop was a very poor one, and the wheat, sown in the autumn of the year, also failed, so that barley was drilled in the spring of 1919. The resulting crop was again very inferior, so that, in 1919, potatoes were put in instead. This crop proved quite good, although in a portion of the same field in which the potatoes were, but which was drilled with swedes, the swedes "went off" almost entirely. In consequence of this it was considered advisable to send me a sample of the soil. The analysis was as follows:—



*(Soil dried at 100° C.)*

Organic matter and loss on heating . . . . .	6.47
Oxide of iron . . . . .	3.52
Alumina . . . . .	3.48
Lime . . . . .	.10
Magnesia . . . . .	.46
Potash . . . . .	.45
Soda . . . . .	.44
Phosphoric acid . . . . .	.16
Sulphuric acid . . . . .	.09
Insoluble siliceous matter . . . . .	84.83
	<hr/>
	100.00
Nitrogen . . . . .	.251

The soil was a red-coloured sandy loam. There was about 7 in. of top soil, which was rather heavier than the rest, this being followed by a very sandy sub-soil. The analysis shows very clearly the need of lime, and the absence of this would, in my opinion, fully account for the failure of the corn crops and more especially the swedes also, while, on the other hand, potatoes, a crop not dependent upon lime, would do very fairly.

The following is a list of the samples submitted to me by members during the twelve months December 1, 1919, to November 30, 1920.

Linseed cakes and meals . . . . .	26
Cotton cakes and meals . . . . .	21
Compound feeding cakes and meals . . . . .	86
Palm-nut cakes . . . . .	8
Ground-nut cakes . . . . .	3
Cereals, offals, &c. . . . .	47
Superphosphates . . . . .	6
Compound manures . . . . .	16
Raw and steamed bones . . . . .	4
Fish meal . . . . .	2
Basic slag . . . . .	35
Nitrate of soda . . . . .	1
Sulphate of ammonia . . . . .	12
Flue dust . . . . .	3
Potash materials . . . . .	8
Shoddy, wool dust, &c. . . . .	7
Refuse manures . . . . .	10
Lime, chalk, &c. . . . .	16
Waters . . . . .	17
Milk, butter, &c. . . . .	26
Soils . . . . .	56
Miscellaneous . . . . .	20
	<hr/>
Total . . . . .	429

J. AUGUSTUS VOELCKER.

1, Tudor Street, E.C.4,  
January, 1921.

ANNUAL REPORT FOR 1920 OF THE  
BOTANIST.

## SEED TESTING. (110).

THE requirements with regard to seed-testing were very similar to those of last year, the numbers of samples for the two years being practically identical. Most of the samples tested were home-grown, as was to be expected, since purchased seeds carry with them guarantees as to purity and germinating capacity. In this connection it should be noted that the Government Seed Testing Station has now abandoned the Irish and adopted the so-called Universal or Continental system of analysing grass seeds, and in consequence the figures for purity and germinating capacity form a real guide as to the value of the seed and the quantities required for sowing. The majority of the seeds were those of the cereals. The wheat samples, as a whole, were disappointing, for the cold, sunless July and August were unfavourable for the full development of the grain. Several were also contaminated with bunt. Oats samples were more satisfactory and germinated well in spite of the fact that much of the grain was small and somewhat pinched. The various clovers were only represented by six samples, roots by two samples of mangold seed, both too small for accurate analysis, and grasses by three samples of rye-grass.

## WEEDS AND POISONOUS PLANTS.

Eighty-three specimens of weeds were reported on during the year. Those sent in on more than six occasions were spurrey, sheep's sorrel, knapweed, rest-harrow, black bent and dyer's weed, and on at least three occasions ragwort, sowthistle, corn-buttermilk, wild radish and *Bromus commutatus*. The last mentioned is now becoming very common in fields of winter oats. Inquiries into its occurrence almost always show that its seed has been introduced with seed oats from the south of England, especially perhaps from Hampshire. In the course of one of these the vendor disclaimed all responsibility for selling foul seed because "winter oats for some unknown cause often degenerated to this wild form." Many dealers appear to have some difficulty in separating seeds of this weed from oats, a difficulty they would either overcome or else avoid, by paying attention to the purity of seed crops, if buyers systematically rejected contaminated samples.

The list contains the following more or less unusual weeds :—  
Penny cress (*Thlaspi arvense*), a weed which is rare in many

parts of the country but abundant in a few localities ; purging flax, a species which, though common, is often overlooked ; dodder on flax ; melilot in abundance in a crop of kidney vetch ; corn-cockle amongst autumn vetches and darnel, the seeds of which are poisonous, amongst oats. Reports were also sent to Members on the following poisonous plants :—Hemlock, meadow saffron and yew.

#### PLANT DISEASES. (75.)

Late in the spring there was an unusual and wide-spread epidemic of "wither-tip" on the young shoots of plums. The attack was so severe that many orchards were apparently crippled for years, but as the season went on the trees, for the most part, made a better recovery than seemed to be possible. Apple-mildew again proved to be very prevalent and it looks as if this disease was increasing in quantity and in the severity of its attacks from year to year. One package of diseased shoots from Worcestershire and a second from Wisbech were of some interest, for the mildew itself was attacked by another fungoid parasite, *Cicinnobolus*. But its capacity for spore formation did not appear to be seriously affected by this disease for the twigs and foliage were thickly covered with the spores of the mildew. Where steps are taken to keep the trees free from disease as soon as it appears in the early summer, there is no great difficulty in preventing the mildew attacks from becoming serious. The procedure is simply to cut off infected shoots as soon as they are detected and burn them. If left on the trees the parasite matures crops of spores, and it is almost a certainty that in the following season many more of the young shoots will be attacked.

Other diseases of fruit reported on were leaf-scorch in cherries, mildew and curl in peaches, apple-scab, bitter rot of apples, apple-canker, American gooseberry mildew and *Botrytis* in the crowns of strawberry plants.

Relatively few examples of cereal diseases were sent in for examination. One of the more interesting consisted of a bunch of ears of the wheat *Benefactor* infected with bunt. The sender's attention had been called to these by the fact that they were appreciably longer and more loosely set than the normal ears of this variety. This lengthening of the ear when bunt is present occurs in some of the denser-eared varieties of wheat, but not in all. At present no explanation of the phenomenon can be offered. Bunted wheat is far commoner than it should be. In part this is due to the fact that a good deal of the grain sold for seed purposes is infected. Buyers should be more on their guard, and if a single bunted grain can be detected in a seed sample, that should be a sufficient reason for rejecting it.

The reason for this apparently drastic course is that many vendors are too prone to assume that wheat can be adequately cleaned by the simple process of blowing out such grains. But whilst it is true enough that the spore-filled grains (bunts) can be removed in this manner, no wind current will dispose of the myriads of spores which inevitably find their way into the grooves of the grains or the brushes of hairs at their tips during the threshing of the crop. Neither will dressing with a copper sulphate solution, unless carried out more efficiently than is ordinarily the case, ensure a clean crop by killing off these spores.

Mildew was again abundant in wheats and oats. Reports were sent to Members on the following diseases :—On potatoes, "curl," corky scab, and "black-leg"; on mangels, rust; on red clover, rust and mildew; on beans, rust; on sainfoin, clover sickness; on peas, mildew; on cattle cabbage, heart-rot; and on forest trees, various rots mainly due to attacks of species of *Polyporus*.

#### GENERAL INQUIRIES. (122.)

A week or so before harvest each day's post brought specimens of wheat ears or an occasional specimen of barley, and the inquiry whether, as they differed from the main crop, they were indications of the varieties "reverting." Whether this unusual batch of inquiries was the result of some article in the agricultural press which has escaped my notice, or not, I cannot say. But in every case the "rogues" were nothing more than stray plants of well-known varieties. It is practically certain that the admixture had been effected by threshing machines. One example, at first a little mysterious, was provided by a Member who had sold a portion of a crop of *Wilhelmina* for seed and retained a portion for his own sowing. His crop contained an abundance of "rogues" of either *Square Head's Master* or *Standard Red* wheat—it was difficult to say which—whilst the crops growing from the grain he had sold were free from this impurity. Though it was impossible to obtain conclusive evidence on the point the probability was that he had reserved for his own planting the first few sacks from an uncleaned threshing machine, and that these had washed out most of the grain the machine contained before it started on the *Wilhelmina* crop. The latter "run" was consequently pure. The whole question of "reversion" is interesting. As far as my experience goes practically every case brought to my notice owes its origin to the admixture of some other variety. In a few cases, however, the "reversion" is due to the marketing of unfixed hybrids, with the result that bearded wheats have appeared in a crop reputed to be beardless, or white grains in samples which should have

been red. Such matters are, or should be, well within the control of the seedsmen, for hybrids ought to be as stable as the old varieties of the cereals. Whether, when admixture and the presence of unfixed hybrids are excluded, there is a residue of genuine "reversions" is questionable.

The number of inquiries concerning orchard problems was unusual. Several Members had considered the advisability of fruit-growing as a minor farm industry, and wrote for particulars regarding the most profitable varieties for planting. But the difficulty of obtaining sufficient supplies of young trees put an end to the matter in most cases. One, however, not readily balked by a difficulty of this sort was prepared to raise his own if stocks could be obtained.

Supplies of quicks for hedgerows also appeared to be scanty, and instructions for raising them from seed were sent to a Member who had failed to obtain a sufficient quantity at a reasonable rate.

Several inquiries on the cropping of very light sandy soils were received, and the growth of rye, buckwheat, kidney-vetch and lupins was recommended for certain purposes. Information was also again required on the preparation of silage, and mixtures of oats and tares were prescribed for both autumn and spring sowing.

The whole list of general inquiries is too extensive to quote in detail: it includes the usual questions on the methods of preparing various fungicides, on mixtures for temporary grass land, on the special characteristics of varieties of the more important crops, on the management of the flax crop and the disposal of its straw, &c., and a few unusual inquiries on such subjects as the value of yarrow in pastures, the formation of tubers on the haulms of potatoes, and the possibility of growing ergot of rye as a drug crop.

R. H. BIFFEN.

School of Agriculture,  
Cambridge.

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ANNUAL REPORT FOR 1920 OF THE  
ZOOLOGIST.

## INTRODUCTION.

THE following Report aims at indicating the insect attacks with regard to which advice has been most frequently sought during the past year, with notes of points of special interest as occasion arises. In most cases the pests are well known, and there is little new to be said about them. In some, however, there have either been circumstances which make the attacks somewhat unusual, or new facts have become known bearing on the life-history of the insects concerned. As is always the case, the applications received have closely reflected the weather conditions during the year. In the spring and early summer the dry weather pests—turnip-fly, red-spider, &c.—were naturally abundant, and caterpillars of all kinds were extremely active. With the July rains there was a remarkable change, and these pests disappeared as if by magic. Not only did most caterpillar attacks cease, but there was a notable paucity of insects of any kind on the wing, and this continued throughout the autumn. Entomologists not concerned with economic pests, but solely bent on collecting, found the season extremely unprolific. Pests already established within the tissues of plants, or busy at their roots, were, however, unaffected, and though few insects were to be observed flying, it by no means followed that they had ceased to be injurious. Aphis of various species were perhaps the most prominent pests on the whole, and in many cases the leaves of the infested plants were so curled by the time the wet weather arrived that the insects were protected from the heavy rains which would have cleared them off at an earlier stage. Among forest pests the most serious has been the *Chermes* of the Douglas fir and the Sitka spruce—the very trees which foresters would most desire to flourish unchecked in view of the extent to which they have been planted in recent years.

*Cereals.*—All the ordinary corn pests recurred to some extent during 1920, gout-fly in barley being, perhaps, the most conspicuous. The spring attack of frit-fly in oats was apparently less severe than usual, and though some cases of damage by the second brood to the grain were reported from the central counties, elsewhere the July rain seems to have prevented its occurrence. Attack by this fly on winter wheat is now observed annually. As stated in last year's report, it is established that the preceding rye-grass is the usual source of infestation. Living larvæ of the fly are still to be found in the rye-grass long after it has been

ploughed in, and they migrate to the wheat when it is ready. Experiments at Cambridge fully confirmed the belief that wheat after a bastard fallow is much less likely to suffer from frit-fly than wheat after rye-grass.

Wheat bulb-fly took its usual toll of wheat this year. I also met with it in winter barley—the first time, as far as I know, that it has been observed in this crop. For a long time it has been recognised that the worst attacks are after fallow, though the explanation of this fact is still obscure. The previous year's cropping of infested fields of wheat clearly influences its liability to bulb-fly attack, though it is often difficult to reconcile the results obtained in different cases. Here is a case of a thirty acre wheat field at Saffron Walden, fairly typical of common experience:—

Acres	Cropping and treatment 1919	Bulb-fly, 1920
6	Mangold. . . . .	Slight attack
12	Fallow; ordinary ploughed and dunged .	Moderate attack
10	Fallow; subsoiled and dunged . .	Crop lost
2	Fallow; ploughed 20 in. deep; not dunged	Bad attack

Every bad attack reported seems to be after fallow, and land heavily cropped the previous summer often goes quite free. In some cases it seems as though the application of manure increased the chances of fly attack; in others, as in the case cited above, there is little indication of this.

In the Annual Report of the Zoologist for 1916 reference was made to our lack of knowledge of the early life of this pest, and to the unsuccessful attempts that had been made to throw light upon the matter. It was related how the Russian Entomologist, Kordiumoff, had published an account of what he believed to be the first-stage larva of the bulb-fly, but how there was reason for believing that he was mistaken, and was really dealing with quite a different insect.

Experiments carried on at Cambridge this year by Mr. Petherbridge have been more successful than those previously attempted, and a number of wheat bulb-flies in captivity laid eggs in the middle of July. So far (November) only three of these eggs have hatched, but the larvæ (or grubs) obtained from them are, as was expected, quite different from those described by Kordiumoff. The unhatched eggs seem perfectly healthy. Possibly they do not hatch normally till the spring, but that remains to be seen.

As far as the experiment has gone it tends to confirm the view that the flies select bare ground, and not plants, on which to lay their eggs. In the cages they were given the choice of ryegrass, wheat, and bare soil, and all the flies which were observed ovipositing did so on the bare soil. If this is really the habit of the fly, it is very remarkable, though perfectly in accordance with farming experience. There was always some idea that there might be sufficient grass in a fallow for the flies to lay their eggs on, since insects whose grubs feed on certain definite plants almost invariably lay their eggs on or near those plants. Indeed if they do not they are doomed to destruction unless their grubs are so active that they can seek their food at a distance, and this is not the case with fly grubs, which are entirely leg-less. To lay eggs on bare ground, on the chance that a corn crop will appear there during the ensuing winter, would obviously be a suicidal policy except under civilisation, for in wild nature there is nothing comparable to a bare fallow. If the corn crop is really the fly's objective, its method of proceeding can only be explained as the result of ages of land cultivation. There is, however, another possibility. It may be that the grubs did not originally feed upon living plants, but upon decaying vegetable matter—of which they might find sufficient for their purpose in soil destitute of living vegetation, and that the attack on the subsequent wheat crop is a change of habit on the part of the insect. The probability of this is indicated by the fact that most of the flies of the particular group to which the wheat bulb-fly belongs do not attack plants but are "saprophytic"—devourers of decaying matter.

Wheat-midge was the subject of inquiry in a few cases. It was also a rather common experience to find a large number of sterile ears in a wheat crop, and though thrips was generally present and may have been the cause, it is possible that some other agency had been at work.

*Grass.*—There was no recurrence of the antler moth this year. Past experience has taught us not to expect it in the same region two years running, but no reports of its appearance in any district reached the Department. Local damage to grass by leather-jacket, wireworm, and summer-chafer grubs was complained of, but one of the worst cases of injury proved unexpectedly to be due to cockchafer grubs. These pests are much more often destructive in forest nurseries than in open grass land, which is far more subject to attack by the smaller species, *Rhizotrogus solstitialis*, the summer chafer. Indeed the cockchafer (*Melolontha vulgaris*) is necessarily confined to a well-wooded district, as abundant foliage is necessary for the mature beetle.

An unusual complaint concerned a ten acre meadow infested



by numberless ant hills which had been radically treated—every mound being dug up and removed at great expense—two years ago without any diminution of the nuisance. Such treatment is generally effective, as it destroys the nest, and turns up the ants and their “eggs” to the birds, and the removed soil is, of course, in admirable condition through the working of the ants. It is not easy to suggest any measure likely to be effective, and I should be greatly obliged for any information from one who has successfully tackled a similar problem. Possibly a heavy dressing of gas-lime might improve matters—at the expense of a year's crop. The grass in the following year would probably be much improved, and large numbers of the insects killed.

*Pulse.*—1920 was a favourable year for pea crops, so that it appears at first sight rather odd that every one of the recognised pea pests was inquired about at one time or another. Of course the explanation is simple. If a crop is cleared off at the outset by *Sitones* weevils it will not be troubled by later pests.

*Sitones* weevils did some harm in the early stages. Later, cases of pea thrips were reported, and attacks by the pea-midge and pea-moth followed. The pea-moth (*Grapholita pisana*) was particularly harmful, especially in late peas, a large proportion of the pods being infested.

Bean aphid was bad in some districts, though less destructive than usual in others. Much of the bean seed this year was infested by the bean beetle (*Bruchus*).

*Roots and Garden Vegetables.*—Early in the season flea-beetles were very destructive to various crops, three species being principally concerned: *Phyllotreta nemorum* on turnips, *P. concinna* on mangolds, and *P. affinis* on potatoes. The pygmy beetle was responsible for the loss of mangolds in some cases, but more frequently the damage was attributable to flea-beetles. It was in connection with the same crop that most of the complaints of millipedes were received.

There were fewer inquiries than usual about root-fly maggots, but slugs, snails, wireworm, and especially surface caterpillars, did much harm. Other pests reported were carrot-fly (on both carrots and parsnips), onion-fly, celery-fly, and asparagus-beetle, which was more abundant in some gardens than I remember to have seen it before.

Of the cabbage caterpillars the one that gave most trouble was that of the cabbage moth (*Mamestra brassicae*), not only because of its habit of boring into the heart of the vegetable, but because it is much more resistant to insecticides than the caterpillars of the white butterflies.

*Fruit.*—A large proportion of the enquiries received during 1920 had reference to fruit pests, but they present few points of

special interest. The lackey-moth reappeared to a slight extent, but was nothing like so formidable as during the previous season. Indeed, caterpillar attacks were not very general, and for the most part ceased on the advent of the wet weather in July. Very large numbers of eggs of red-spider had been noticed on fruit trees in the spring, but attacks did not materialise to the degree expected. Aphis, on the other hand, was very destructive, and was the outstanding fruit pest of the season.

Apple-blossom weevil did much harm in some districts. Pear-midge was reported from a few localities, but the complaint was not general. Some damaged plums were found to be attacked by the caterpillar of the small moth *Opadina funebrana*.

Saw-fly on gooseberries, "big-bud" on black currants, and raspberry-beetle were common everywhere. The only case of injury to bush fruit at all unusual was one in which the failure of logan-berries was found to be due to "leather-jacket," numerous half-grown grubs of *Tipula* being found at the roots of each plant.

*Forest pests.*—Very few inquiries were received with regard to insects injurious to forest trees, and only one of importance. This related to a *Chermes* infesting the Douglas fir, and as, though it was only once brought to the notice of this Department, it has been the most important forest pest of the year, it is desirable to insert some account of it.

In 1913 Messrs. A. C. Forbes and A. Henry were the first to recognise in England a *Chermes* found in Douglas fir in the New Forest as being identical with the *Chermes cooleyi* var. *loweni* of North America. Since that date the pest has become widely spread, and is now serious. In the States the *Chermes* alternates between the Douglas fir and certain spruces—just as our larch-bug alternates between the larch and the spruce. In England its alternative plant is the Sitka spruce. Now the Douglas fir, because of its suitability for dry soils and sheltered situations, and the Sitka spruce, because it flourishes where the soil is wet and the position exposed, have been largely planted of late years in the British Isles.

Mr. G. R. Speyer (*Gardener's Chronicle*, July 17, 1920) states that the attack on the spruce is almost altogether confined to the lower branches, and continues—"were it practicable to remove or even to spray the lower branches of the spruce in June and July these pests might easily be controlled." Mr. A. Henry emphasises the great importance of obtaining seed from vigorous trees in suitable condition, and suggests that much benefit would accrue from official supervision of the seed collectors in N. America.

The other forestry pests inquired about included willow-scale,

ash-bark beetle (*H. fraxini*), hazel gall-mite, poplar longicorn, and wood-wasps (*Sirex*).

*Miscellaneous Notes.*—Wasps are often the subject of inquiries, and have been frequently discussed in the Miscellaneous notes. Here is a new observation, for which I am indebted to Col. Stanyforth.

In 1919 and again in 1920 a number of "white-backed" wasps had been observed. It was noticed that these wasps were particularly savage—"attacking any person going within two or three yards of the nest." Very naturally they were supposed to be a peculiar species, new to the district, and specimens were sent to me for identification at the end of September. I found them to be the common species, *Vespa vulgaris*, but the "white-backed" specimens had the head and thorax encrusted with a white powder which on examination under the microscope, proved to be pollen. I did not recognise the pollen, but suggested to the Agent, Mr. Cass, that he should take note of any flowers especially visited by the wasps, and should send me specimens of them. He very kindly made a special search, and found a wasps' nest in a bed of balsam (*Impatiens noli-me-tangere*), the pollen of which I found to be identical with that I had previously scraped from the wasps' backs. Again numerous white-backed specimens were noticed, and again it was observed that they were far more irritable than the others.

Wasps rear their grubs, of course, almost entirely on insect food, but the wasps themselves are, as every one knows, exceedingly fond of anything sweet, and are strongly attracted to ripe fruit and to the nectaries of various flowers. The very plentiful and adherent pollen of the balsam, acquired in their search for the nectar, altered their appearance and seems to have had a bad effect on their tempers. It was not till the second week in October that the pollen grains were traced to their source, and the nest was still in full activity. This is an unusually late date, and an additional indication of the prolongation of the summer season, for in ordinary years the nests become extinct and the queen wasps depart to seek their winter shelter towards the end of September.

Early in the year I received for identification a number of insects which were found in mail bags returned to head quarters from the various battle fronts—France, Salonica, Mesopotamia, &c. They proved to be the common body-louse, and some of them were still living. Why lice should be present in mail bags was not at first obvious, but it transpired that these bags were in great demand among soldiers as weather-proof receptacles for clothes—or even for sleeping in. No doubt they had contained louse-infested clothing, and had themselves become infested. It was very unfortunate that the mail bags

had been so mingled that there was no possibility of learning the history of any particular bag. Otherwise useful information might have been obtained as to the length of time these parasites are able to exist without food and under varying conditions.

CECIL WARBURTON.

School of Agriculture,  
Cambridge.

## THE WOBURN EXPERIMENTAL STATION OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

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## FIELD EXPERIMENTS, 1920.

The season 1919-20 was, on the whole, a distinctly unfavourable one. It was marked by the large number of rainy days that occurred and by a succession of cold damp spells at the critical times of crop-growing. The total rainfall for the year was 25.12 ins. with 224 rainy days as against 27.53 ins. with 197 rainy days in the previous year. The winter was a mild one, there being but little frost. A good start was given to the autumn-sown crops, and the work was well forward before Christmas. December, 1919, was very wet, 4.06 ins. falling, and there being 26 rainy days out of the 31. The temperature, however, was generally above that of November, and there was no frost or snow to speak of. February was dry and mild,

though the nights were cold. The rainfall was only .54 in., and there were but 9 rainy days. There was a warm spell at the end of March, the thermometer frequently reaching, in the shade, 60° F. and over. April was wet, with cold winds, and these caused the wheat to turn yellow and delayed the sowing of barley. Drought at the end of May and beginning of June checked the growth, while in June there were cold nights with thunderstorms at the close of the month. These latter delayed hay-making considerably. July was a very wet month, there being 25 rainy days and a rainfall of 3.55 in. This caused much corn to "lodge." The result was that the corn crops ripened very badly, the barley being especially uneven. Sunshine towards the end of August enabled the corn crops to be got in. The general result of the season, as regards the corn crops, was that there was plenty of straw, but that the corn threshed out was very much less than the appearances in the field indicated. Moreover, the grain was of very inferior quality.

As regard the hay crop, that which was ready early was got in well, but the later crop was considerably spoiled. Early sown mangels seemed, at first, to have failed, but they came up later and gave a fair crop. The first sowing of swedes failed, but the second did well and a more than usually good crop for the land was obtained. The season, however, was unfavourable for potatoes and these were considerably attacked by disease.

#### CONTINUOUS GROWING OF WHEAT (*STACKYARD FIELD*), 1920 (44TH SEASON).

The chief operations were as follows :—

1919, Sept. 26. Farmyard manure given to plot 11 b.

The manure contained .572 per cent. of nitrogen ;  
the quantity applied per acre, in order to give  
100 lb. of ammonia, was 6 tons 8 cwt. 2 qrs.  
17 lb.

„ Sept. 30–Oct. 3. Land ploughed.

„ Oct. 22. Mineral manures applied (plots 4, 5, 6,  
8, 9, 10a, 11a). Rape dust applied to plot  
10b (.461 per cent. nitrogen), the quantity  
given per acre being 447 lb. in order to supply  
25 lb. of ammonia.

„ Nov. 5. "Little Joss" wheat drilled, at 10 pecks  
per acre.

1920, May 13. First top-dressings of sulphate of ammonia  
and nitrate of soda put on.

„ June 1. Second top-dressings given.

„ Aug. 18. Wheat cut.

„ Sept. 2. Wheat threshed.

„ Oct. 1. Corn dressed and weighed.

The only change made this season in the experiments was that rape dust was put on at the time of sowing the wheat instead of in spring. This was thought desirable in order to allow longer for the rape dust to work.

The wheat came up well, though, as usual, plots 2a, 8a and 8b, were nearly bare. In April, 1920, the wheat was looking yellow on account of the wet and cold winds. It improved somewhat in May, but never thoroughly recovered. Plots 8aa and 8bb showed the effects of the lime which had been applied again in January, 1918, but it was clear that 10 cwt. per acre was an insufficient dressing. Plot 5b, to which 1 ton of lime had been given in 1905, appeared to be similarly falling off. Of the two plots 2b and 2bb, the latter looked the better. The farmyard manure plot, 11b, was, throughout the season, by far the best plot. Plot 10b (rape dust), however, was but little behind it, and, towards the end of the season, looked, if anything, the better of the two. The nitrate of soda plots were all very weedy, but there was no actual failure of crop, even when nitrate of soda was used alone.

The harvest results are given in Table I, page 258.

The wheat crop threshed out less than it looked in the field. The unmanured plots gave, on the average, 8.5 bushels of corn and 7 cwt. of straw per acre. This was 1 bushel of corn more than in 1919, but the crop, generally, was the lowest since 1916.

The highest yield of corn was 19.5 bushels per acre, this being obtained equally by superphosphate with nitrate of soda, and by superphosphate with sulphate of ammonia, together with lime.

Mineral manures showed a small increase of 1.4 bushels of corn per acre.

Coming to the plots treated with sulphate of ammonia—5a, to which no lime has as yet been applied, continues to hold out wonderfully well, and, no doubt, the minerals applied to it yearly have, in a measure, taken the place of the lime, inasmuch as when the minerals have been omitted and sulphate of ammonia alone been used (plot 2a) the crop has for some years entirely failed. The heavier application of sulphate of ammonia, also without lime (plot 8a), has markedly reduced the crop, viz., from 16.7 bushels to 6.8 bushels, though when lime was given to this plot the produce rose to 18.4 bushels (plot 8aa). Where sulphate of ammonia was used without minerals, the limed plot 2b continued to keep on quite fairly, although no lime had been applied since 1897. 2bb was not as good as 2b, although it had been so the previous year. Lastly, the produce of 2aa would indicate that the dressing of lime had been insufficient.

Nitrate of soda, when used by itself, continued to yield

fair crops. The heavier dressing (plot 3a) gave less than a bushel more than the single dressing (plot 3b). The advantage of using mineral manures alone with the nitrate of soda was shown in the comparison of plots 3b and 6; the minerals producing 3.1 bushels more corn per acre. This single dressing of nitrate of soda—say,  $1\frac{1}{2}$  cwts. per acre—gave a better return than did the double dressing (plot 9a), also with minerals.

The comparison of plots 10a and 11a showed, as was the case last year, that there was nothing to choose between the use of phosphate or of potash, or the omission of one or the other.

Rape dust (plot 10b) gave, it will be seen, quite as good a return as did the farmyard manure. This had not been the case in 1919 when the rape dust was sown much later. In other seasons the results have been very variable, and it would certainly appear now that the earlier sowing is an advantage.

Farmyard manure gave practically the same amount of corn as did the rape dust, but 4 cwts. per acre more straw.

The corn was valued as usual, but, owing to the uncertainties of the market, it was very difficult to know what price to put upon the samples. Taking last year's basis of 76s. 6d. per quarter, the best sample (from plot 5b, sulphate of ammonia with minerals and lime) was put at 75s. per quarter. The next best were plots 2a and 5a, on both of which sulphate of ammonia had been used; and the rest were all much alike and not valued above 72s. 6d. per quarter. The wheats were not up to the average of the district. Some of the corn was in bad condition and contained a good deal of immature grain.

#### CONTINUOUS GROWING OF BARLEY (*STACKYARD FIELD*).

##### 1920 (44TH SEASON).

The chief operations were as follows:—

1919, Nov. 26–Dec. 4—Land ploughed.

1920, Mar. 8—Farmyard manure applied to plot 11b.

The manure contained .512 per cent. of nitrogen; 7 tons 3 cwt. 3 qrs. 3 lb. per acre were required to supply the necessary 100 lb. of ammonia.

„ Mar. 17–20—Second ploughing of land.

„ April 6—Mineral manures applied, and also rape dust to plot 10b. The rape dust contained nitrogen 5.65 per cent., 364½ lb. per acre being required to supply the 25 lb. of ammonia.

„ April 7—“Plumage” barley was drilled at the rate of 10 pecks per acre.

„ May 15—First top-dressings of sulphate of ammonia and nitrate of soda applied.

- 1920, June 1—Second top-dressings applied.  
„ Sept. 9—Barley cut.  
„ Sept. 29—Barley carted and stacked.  
„ Nov. 29—Barley threshed.  
„ Dec. 2—Corn dressed and weighed.

There was no alteration of the plan of experiment this season. It was soon evident that plot 2aa needed liming again. Plot 3a (nitrate of soda alone, double-dressing) was considerably better than 3b (single-dressing), but both were small crops, and there was a great deal of spurry on the land. The crop was less than where no nitrogen, but minerals only, had been applied, and plot 6, where mineral manures had been put on with nitrate of soda, was far better. From this consideration, and from indications previously given, it would certainly appear as if the plots 3a and 3b, on which nitrate of soda alone had been applied, were beginning to show failure, just as 2a (sulphate of ammonia alone) had previously done. It has accordingly been decided to divide the plots 3a and 3b, and to apply lime to one half of each. The farmyard manure plot (11b) looked, throughout the season, far the best, and rape dust (10b) was not nearly equal to it, thus showing a marked contrast to what had been noted in the case of the wheat crop.

The harvest results are given in Table II, page 259.

The season was all against the proper ripening of barley, and the crop was a smaller one than any since 1915.

The average of the unmanured plots was 7.5 bushels of corn with 6 cwt. 1 qr. 14 lb. of straw per acre. The highest yield, viz., 33.4 bushels of corn and 26 cwt. of straw per acre, was obtained with farmyard manure. This produce, however, was greatly in excess of that of any of the other plots.

Mineral manures alone, and with lime (plots 4a and 4b) showed an unaccountable difference, the addition of lime this time giving the lower yield; for this there is no adequate reason, and it is contrary to the results of previous years.

In the sulphate of ammonia plots, 2aa clearly showed the need of more lime. The more heavily limed plots still showed a fair produce. It would appear that barley, on such land as this, needs more frequent applications of lime than does wheat.

Nitrate of soda, as already observed, seems to show some failing. The single dressing (1½ cwt. per acre) produced only 6.3 bushels of corn per acre as against 7.5 bushels on the unmanured plot. The effect of using minerals with the nitrate of soda is seen in the comparison of plots 3b and 6, the yields being 3.6 and 17 bushels per acre respectively. The heavier dressing of nitrate of soda (2½ cwt. per acre) gave an addition of nearly 3 bushels of corn per acre.



TABLE I.—*Continuous Growing of Wheat, 1920 (44th Season).*

(Wheat grown year after year on the same land, the manures being applied every year.)

Stackyard Field—Produce per acre.

Plot	Manures per acre	Head Corn		Tail corn	Straw, chaff, &c.		
		No. of bush.	Weight per bushel	Weight			
1	Unmanured . . . . .	9.8	Lb. 57.5	Lb. 6	C. 8	q. 2	lb. 15
2a	Sulphate of ammonia (=25 lb. ammonia) . . . . .	1.6	60.0	4	2	1	4
2aa	As 2a, with 5 cwt. lime, Jan., 1905, repeated 1909, 1910 and 1911 . . . . .	6.8	60	12	6	3	20
2b	As 2a, with 2 tons lime, Dec., 1897 . . . . .	12.3	60	29	9	3	12
2bb	As 2b, with 2 tons lime (repeated), Jan., 1905 . . . . .	9.0	58	26	9	0	12
3a	Nitrate of soda (=50 lb. ammonia) . . . . .	17.2	53.9	22	19	1	0
3b	Nitrate of soda (=25 lb. ammonia) . . . . .	16.3	54.1	22	17	1	6
4	Mineral manures (superphosphate, 3 cwt.; sulphate of potash, $\frac{1}{2}$ cwt.) . . . . .	9.9	57.1	8	9	2	16
5a	Mineral manures and sulphate of ammonia (=25 lb. ammonia) . . . . .	16.7	57.4	12	12	0	0
5b	As 5a, with 1 ton lime, Jan., 1905 . . . . .	19.5	57.6	22	13	1	26
6	Mineral manures and nitrate of soda (=25 lb. ammonia) . . . . .	19.4	56.3	16	16	2	16
7	Unmanured . . . . .	7.1	58.5	12	5	2	3
8a	Mineral manures and (in alternate years) sulphate of ammonia (=50 lb. ammonia) . . . . .	6.8	62.0	20	6	2	0
8aa	As 8a, with 10 cwt. lime, Jan., 1905, repeated Jan., 1918 . . . . .	18.4	56.5	20	11	0	4
8b	Mineral manures, sulphate of ammonia (=50 lb. ammonia) omitted (in alternate years) . . . . .	3.0	58.0	12	3	0	24
8bb	As 8b, with 10 cwt. lime, Jan., 1905, repeated Jan., 1918 . . . . .	18.7	56.0	20	13	2	20
9a	Mineral manures and (in alternate years) nitrate of soda (=50 lb. ammonia) . . . . .	13.7	55.0	52	15	3	0
9b	Mineral manures, nitrate of soda (=50 lb. ammonia) omitted (in alternate years) . . . . .	8.9	56.0	26	5	1	4
10a	Superphosphate 3 cwt., nitrate of soda (=25 lb. ammonia) . . . . .	17.1	55.8	40	16	2	22
10b	Rape dust (=25 lb. ammonia) . . . . .	16.6	57.8	11	14	0	24
11a	Sulphate of potash 1 cwt., nitrate of soda (=25 lb. ammonia) . . . . .	17.2	57.1	24	15	2	14
11b	Farmyard manure (=100 lb. ammonia) . . . . .	16.4	56.7	50	18	0	10

TABLE II.—Continuous Growing of Barley, 1920 (44th Season).

(Barley grown year after year on the same land, the manures being applied every year.

Stackyard Field—Produce per acre.

Plot	Manures per acre	Head corn		Tall corn		Straw, chaff, &c.		
		No. of bush.	Weight per bush.	Weight	Weight			
			Lb.	Lb.	C.	q.	lb.	
1	Unmanured . . . . .	7.7	51	36				
2a	Sulphate of ammonia (=25 lb. ammonia) . . . . .	3.1	51	4	1	2	16	
2aa	As 2a, with 5 cwt. lime, Mar., 1905, repeated 1909, 1910, and 1912 . . . . .	4.0	52	20	5	0	8	
2b	As 2a, with 2 tons lime, Dec., 1897, repeated 1912 . . . . .	4.5	51	12	2	2	24	
2bb	As 2a, with 2 tons lime, Dec., 1897, repeated Mar., 1905 . . . . .	9.0	52	32	9	0	8	
3a	Nitrate of soda (=50 lb. ammonia) . . . . .	10.8	49.8	50	9	0	10	
3b	Nitrate of soda (=25 lb. ammonia) . . . . .	6.3	51	30	6	0	14	
4a	Mineral manures <sup>1</sup> . . . . .	15.7	49.3	74	10	1	14	
4b	As 4a, with 1 ton lime, 1915 . . . . .	9.7	49.3	48	7	0	14	
5a	Mineral manures and sulphate of ammonia (=25 lb. ammonia) . . . . .	4.6	50	18	4	3	0	
5aa	As 5a, with 1 ton lime, Mar., 1915, repeated 1916 . . . . .	15.3	50	80	12	1	17	
5b	As 5a, with 2 tons lime, Dec., 1897, repeated 1912 . . . . .	16.1	50.3	78	10	1	6	
6	Mineral manures and nitrate of soda (=25 lb. ammonia) . . . . .	17.0	48.8	59	12	3	4	
7	Unmanured . . . . .	7.2	49.1	38	5	2	25	
8a	Mineral manures and (in alternate years) sulphate of ammonia (=50 lb. ammonia) . . . . .	1.4	50	2	1	3	12	
8aa	As 8a, with 2 tons lime, Dec., 1897, repeated 1912 . . . . .	16.9	50.5	92	12	0	12	
8b	Mineral manures, sulphate of ammonia (=50 lb. ammonia) omitted (in alternate years) . . . . .	1.0	50	2	1	0	8	
8bb	As 8b, with 2 tons lime, Dec., 1897, repeated 1912 . . . . .	10.1	50	32	5	3	24	
9a	Mineral manures and (in alternate years) nitrate of soda (=50 lb. ammonia) . . . . .	19.8	49.3	68	14	0	16	
9b	Mineral manures, nitrate of soda (=50 lb. ammonia) omitted (in alternate years) . . . . .	14.2	49	66	11	1	2	
10a	Superphosphate 3 cwt., nitrate of soda (=25 lb. ammonia) . . . . .	18.1	49.4	52	13	2	8	
10b	Rapo dust (=25 lb. ammonia) . . . . .	12.2	50.5	72	11	1	16	
11a	Sulphate of potash 1 cwt., nitrate of soda (=25 lb. ammonia) . . . . .	25.2	49	76	17	2	6	
11b	Farmyard manure (=100 lb. ammonia) . . . . .	33.4	50.5	106	25	3	24	

<sup>1</sup> Superphosphate 3 cwt., sulphate of potash, † cwt.

The comparison of plots 10a and 11a shows a decided advantage from the inclusion of potash as against that of phosphate, 7 bushels of corn per acre more being obtained through using sulphate of potash. A similar result was obtained in 1919 (an addition of 8 bushels per acre), and, indeed, this has been so to a more or less extent each year since 1915. Accordingly, there would seem to be a steady increase, and one pointing to the need of potash for barley on this land. This, as previously mentioned, has not as yet been shown in the case of the wheat crop.

Rape dust, though put on earlier this season, viz., at the time of sowing, did not effect the same improvement as was shown with wheat, the crop being but a small one, whereas farmyard manure gave much the largest crop of all. This again, as with potash and phosphate, would seem to indicate some clear difference in the nature of the two crops, wheat and barley, in regard to their respective powers of utilising different manurial substances applied.

The barley was valued as usual, but none of it was at all fit for malting. There was a great deal of unripe, badly weathered corn, and none of the samples would have fetched above 60s. per quarter.

ROTATION EXPERIMENTS—THE UNEXHAUSTED MANURIAL VALUE OF CAKE AND CORN (*STACKYARD FIELD*).

*Series C. 1920, Red Clover after Barley.*

Red Clover had been drilled on May 26, 1919 in the barley crop of that year. The clover grew well and was cut for hay on June 17, 1920, the crop being carted on June 24–25. A good second crop was also obtained, which was cut on August 24, and carted September 6–7. The respective weights of hay are given in Table III.

TABLE III.—*Rotation Experiment—the Unexhausted Manurial Value of Cake and Corn, Series C (STACKYARD FIELD). 1920, Red Clover (hay).*

Plot		1st crop			2nd crop			Total		
		T.	c.	q. lb.	T.	c.	q. lb.	T.	c.	q. lb.
1	Corn-fed plot	1	14	0 10	1	2	2 21	2	16	2 21
2	Cake-fed plot	1	15	0 25	1	1	1 14	2	16	2 11

There was, accordingly, nothing to choose between these two plots, any more than had been the case with the preceding barley of 1919. The last manuring of these plots was early in 1919 when the root crop of 1918 was fed on the land with

corn and cake respectively. Hence, so far, there has been nothing in the first two crops, subsequent to the manuring, to put to the credit of the richer cake application.

*Series D. 1920, Wheat, after Red Clover.*

The red clover hay crop of 1919 following the barley of 1918 was much the same on the two plots. The land was ploughed early in October, and wheat ("Little Joss") was drilled on October 31 at the rate of 10 pecks per acre. The wheat came up well. It turned somewhat yellow during the wet and cold winds of April, 1920, but did not suffer as much as did the continuous wheat, and, subsequently, it entirely recovered. The wheat looked well throughout the rest of the season and gave promise of a really good crop for the light land of Woburn. On the occasion of the annual visit of inspection by the Council of the R.A.S.E., some went so far as to estimate the yield at 40 bushels per acre. Others, less sanguine, considered 4 quarters (32 bushels) quite likely. The results at threshing showed, however, the disappointing nature of the season, the crop not yielding much more than 3 quarters per acre. This was the general experience in 1920 regarding the corn yield, the unfavourable season for ripening preventing the proper development of the grain and causing a low yield of corn. The wheat was cut on August 17, and threshed direct in the field on September 1 without stacking. The corn was dressed and weighed on September 29. The results are given in Table IV.

TABLE IV.—*Rotation Experiment—the Unexhausted Manurial Value of Cake and Corn. Series D (STACKYARD FIELD), 1920—Wheat after Red Clover.*

Plot		Head Corn			Tail Corn	Straw, chaff, etc.
		Weight	Bush.	Weight Per Bush.	Weight	
		Lb.		Lb.	Lb.	
1	Corn-fed Plot	1,599	26.6	60.3	71	C. qr. lb. 19 3 14
2	Cake-fed Plot	1,650	27.1	61.0	106	20 1 2

It will be seen that 27.1 bushels was the highest yield, and that in this, the 4th crop after the manuring with cake and corn, there was no material difference in favour of the richer cake manure. The barley crops of 1917-18, moreover, had both been slightly better on the corn plot than on the cake one.

In passing, it may be noticed that the wheat crop, grown in rotation after clover, was 7 bushels per acre better than the

highest produce (artificially manured or with farmyard manure) in the continuous wheat-growing series in the same field.

In the valuation of the corn it was stated that these samples were better grown and better matured than those of the continuous wheat series, though somewhat lacking in "strength." Plot 1 (corn-fed) had "broken" smut in it, but plot 2 (cake-fed), though still smutty, had no "broken" smut. On this account it was put at 76s. per quarter as against 73s. for plot 1.

#### GREEN-MANURING EXPERIMENTS.

##### (a) *STACKYARD FIELD. Series A.*

In 1920 the wheat crop followed the green crops grown in 1919, and which had been fed off by sheep with cotton cake ( $1\frac{1}{2}$  cwt. per acre). The green crops, it may be repeated, were all exceptionally good, so that an excellent wheat crop might well have been expected to follow them. The facts, however, proved, as will be seen, otherwise.

The land was ploughed on September 18-25, 1919, after the sheep-feeding. On November 1 "Little Joss" wheat, at the rate of 10 pecks per acre, was drilled. The wheat came up satisfactorily, but the crops never looked good, and they turned very yellow under the influence of the wet and cold winds of April, 1920.

The wheat was cut on August 17, and threshed in the field without stacking, on September 1. The corn was dressed and weighed on September 29. The harvest results are given in Table V.

TABLE V.—*Green-manuring Experiment (STACKYARD FIELD).*

Produce of Wheat per acre, 1920—after Green Crops. Series A.

Plot	Manuring in 1920	Head Corn			Tall Corn	Straw, chaff, etc.	
		Weight	Bush.	Weight per Bush.	Weight		
		Lb.		Lb.	Lb.	G.	q. lb.
1	After Tares fed off	588	9.7	60.8	75	12	0 6
2	After Rape fed off	820	13.5	60.9	58	10	3 19
3	After Mustard fed off	870	14.2	61.2	58	10	2 6

It will be seen that mustard gave the best crop, then rape, and tares decidedly the poorest. This is the same result as had been obtained in 1918, and it confirms the previous experience in Lansome Field. Apart from this, the crops were, however, unaccountably poor. If reference be made to Table IV (page 261), wheat on the same field, but following red clover, gave 26.6 and 27.1 bushels of corn per acre respectively, but

now only 10-14 bushels per acre were obtained, though the preceding green crops had been especially good, and though these had been fed off by sheep along with  $1\frac{1}{2}$  cwt. of cotton cake per acre. For this some explanation must be sought, and the endeavour will be made to explain the divergence from what would be expected, inasmuch as the more nitrogenous crop, tares, should collect and store up in the soil more nitrogen than the non-leguminous crop, mustard; and, consequently, the corn crop following it should be better. One fact is clearly brought out, viz., that the corn crops on these green-manuring plots are not what they should be. A possible cause may be that the land is in need of further mineral manuring, and, in order to meet this possibility, it is intended to give a dressing of phosphates and potash to the next series of green-manuring crops.

It struck me also that examination of the soil of the green-manure plots and a comparison of these with the soil of Series D (where red clover preceded wheat) might give some information. Accordingly, samples of the soil were taken, and these gave the following results:—

	Mustard Plot	Tares Plot	Red Clover Plot
	Per cent.	Per cent.	Per cent.
Water . . . . .	11.07	12.05	12.54
Organic matter (loss on heating) . . . . .	5.63	5.92	6.17
Nitrogen . . . . .	.098	.114	.122
	bushels	bushels	bushels
Wheat 1920, corn per acre .	14.2	9.7	27.1

From this it is seen that the soil of the tares plot has alike more organic matter and more nitrogen than has that of the mustard plot, the red clover soil being still richer in both respects. Further, the tares soil and the red clover soil have more water than the mustard soil. Yet the higher nitrogen in the tares soil has not caused it to produce as much corn as the poorer (in nitrogen) mustard soil, though where the higher nitrogen has been derived from red clover the corn crop is markedly greater. This would point either to some definite differences in the behaviour of the three green crops, or to the fact that, for some reason as yet unknown, the nitrogen stored up by the tares crop does not get to work. Abundant field for future enquiry is here set out.

There was no difference between the three plots (mustard, rape and tares) as regards the corn valuation. In each case there was smutted grain, but this was not "broken." The corn was stated to be well-matured for the season and in good condition. 76s. per quarter all round was the price assigned.

(b) *Lansome Field.*

In the corresponding experiment in Lansome Field, where the green crops, instead of being fed on the land, are ploughed in green, the land was fallowed and cleaned in 1919, with a view to getting rid of the weeds which had, of late, greatly increased in this field. Barley was sown in 1920, but the crop came up very unevenly and was never satisfactory, so that the results are not here recorded, and the experiments will be restarted in 1921.

THE RELATIVE VALUES OF LIME AND CHALK FOR LIMING PURPOSES (*STACKYARD FIELD*), 1920. *Series B.*

On these plots, where lime and chalk, used in different quantities, are being compared, swedes in 1920 followed the barley crop of 1919. The land was ploughed in October, 1919, and a second time May 22-25, 1920; 3 cwt. of superphosphate and 1 cwt. of sulphate of potash per acre were given and "Darlington Swede" seed was drilled on May 28 at the rate of 8 lb. per acre. This first sowing failed, but swede seed was again drilled on June 21, and this time came up very well, so that quite a fair crop, for the land, was obtained. The roots were pulled on December 8, and the weights are given in Table VI.

TABLE VI. *Lime and Chalk Compared (STACKYARD FIELD), 1920. Series B.*

Produce of Swedes, after Barley.		
Plot	Applications per Acre	Produce of roots per acre
		T. cwt. qrs. lb.
1	Nothing	16 5 2 24
2	Chalk = 10 cwt. lime	15 10 0 0
3	" = 1 ton "	18 5 2 24
4	" = 2 tons "	19 4 1 4
5	" = 3 tons "	16 8 2 8
6	" = 4 tons "	19 2 3 12
7	Nothing	18 2 3 12
8	Lime (caustic) 10 cwt.	17 14 1 4
9	" " 1 ton	20 1 1 20
10	" " 2 tons	19 4 1 4
11	" " 3 tons	18 12 3 12
12	" " 4 tons	18 14 1 4

Nothing very definite can be made out from these results. Moreover, there is not the agreement between the duplicate plots 1 and 7 which one would like to see. On the whole, it

would appear that lime has done rather better than chalk, and the best results were obtained from an application of 1 ton and 2 tons per acre respectively of lime. This being only the second year of the experiment it is clear that this experiment will have to be continued for some time before any definite conclusions can be drawn.

## GRASS EXPERIMENTS.

1. *Broad Mead*, 1920.

- (a) Improvement of Old Pasture.
- (b) Varieties of Lime.
- (c) Different Forms of Lime.

In the old pasture series, the last application of manures having been in 1913, these were now again given. An alteration was made on Plot 1, 1 cwt. of nitrate of potash per acre being replaced by 3 cwt. of kainit. This and the other applications were made on January 15, 1920, with the exception of the farm-yard manure (plot 6), which did not go on until February 16. In experiment (c) (different forms of lime) the various applications of lime were again given in January 1920, the last previous application having been in 1913.

The plots were all chain-harrowed in February, this being followed by rolling. The grass was cut on June 22-26, and carting began on June 28-30. A good deal of the hay was spoilt by rain, but it was all finally gathered and stacked by July 10. The results are given in Tables VII, VIII, and IX.

TABLE VII. *Improvement of Old Pasture (Broad Mead).*  
Produce of Hay per acre, 1920.

Plot	Manuring per acre in 1920	Weight of hay per acre		
		T.	c.	q. lb.
1	Basic slag 10 cwt.	1	9	3 0
	Kainit 3 cwt.			
2	Mineral superphosphate 5 cwt.	1	4	0 0
	Sulphate of potash 1 cwt.			
3	Basic slag 10 cwt.	1	4	2 0
	Sulphate of potash 1 cwt.			
4	No manure	1	2	3 0
	Lime followed (in 1913 and 1920) by			
5	Superphosphate 3 cwt.	1	2	2 0
	Sulphate of potash 1 cwt.			
6	Dung 12 tons	1	14	2 0



TABLE VIII.—*Varieties of Lime on Grass Land (Broad Mead).*  
Produce of Hay per acre, 1920.

Plot	Lime applied in 1910 and again in 1916 <sup>1</sup>	Weight of hay per acre			
		T.	c.	q.	lb.
1	Buxton lime . . . . .	1	2	2	0
2	Chalk lime . . . . .	1	0	1	0
3	Magnesian lime . . . . .			19	3 0
4	No lime . . . . .	1	4	3	0
5	Lias lime . . . . .	1	4	0	0
6	Oolite lime . . . . .	1	4	2	0

<sup>1</sup> Two tons per acre in each case.

TABLE IX.—*Different Forms of Lime on Grass Land (Broad Mead).*

Weights of Hay per acre, in 1920.

Plot	Lime applied 1913 and again in 1920 <sup>1</sup>	Weight of hay per acre			
		T.	c.	q.	lb.
1	Lump lime . . . . .	1	9	3	0
2	Ground lime . . . . .	1	6	1	0
3	Nothing . . . . .	1	5	2	0
4	Ground limestone . . . . .	1	14	1	0
5	Ground chalk . . . . .	1	14	0	0

<sup>1</sup> 20w. per acre (independently of carriage, cartage, &c.), was originally spent on each plot for the lime used.

In (a) the results were singularly like those of 1919. The heaviest yield was from plot 6 (farmyard manure), though the hay was of coarser quality than from any other plot. The next best yield, and of much better quality, was the hay from plot 1 (basic slag and kainit). Superphosphate and basic slag with, in each case, sulphate of potash, gave much the same results.

(b) The results this year were somewhat different to those of 1919 when the unlimed plot was the poorest of all, and when the application of lime of one kind and another gave in every case some benefit. Now the unlimed plot was as good as any. Magnesian lime was, however, the poorest plot.

(c) As in 1919, the unlimed plot gave the lowest return, and decidedly the best plots were those treated with ground limestone or ground chalk. These results were similar to those of 1919.

2. *Charity Farm—West Brook Field, 1920.*

Plot 1 (always hayed) was the only one to be mown in 1920. The plots were chain-harrowed in March and April 1920. The grass of plot 1 was cut July 20-21, and the hay carted on August 3-4. The weight of hay was as follows :—

		Weight of hay per acre.			
		T.	c.	q.	lb.
Plot 1 (always hayed)	.	1	4	1	16

RAINFALL AT WOBURN EXPERIMENTAL STATION, 1919-20.  
(292 ft. above sea level.)

		No. of days with '01 in. or more recorded			Total Inches	No. of days with '01 in. or more recorded
1919.			March . . .		1.95	19
October . .	1.50	17	April . . .		3.98	27
November . .	1.50	23	May . . .		2.16	20
December . .	4.06	26	June . . .		1.62	13
1920.			July . . .		3.55	25
January . .	1.95	18	August . .		1.29	12
February . .	.54	9	September .		2.02	15
			Total . . .		25.12	224

POT-CULTURE EXPERIMENTS, 1920.

1. *The Hills' Experiments—(a) The Influence of Compounds of Tin upon Wheat.*

Little seems to be known about the effects of Tin compounds upon vegetation. It was accordingly determined to make trials with these at Woburn. The selected compounds were Stannous and Stannic oxides, chlorides, and sulphates. The soil used was that of Stackyard Field, the pots earthenware ones, and each experiment was in duplicate. The quantities of the compounds used were (in terms of the metal Sn) .05 per cent and .10 per cent., except in the case of the chlorides (which, it was thought, might possibly prove more toxic) where the smaller amount of .025 per cent. was also given. The percentages were, as usual, reckoned on the whole soil after mixing with the various compounds.

On December 11, 1919, wheat was sown, twenty seeds in each pot.

As regards germination, a slightly retarding effect was noticed with Stannous chloride .05 per cent., and also with Stannic chloride .10 per cent. Six days later all the plants with

the Stannous chloride had come up, but with Stannic chloride only fourteen out of the twenty seeds sown germinated. The sulphates seemed, if anything, to accelerate the growth. The plants were thinned out to twelve in each pot in February, and the growth went on, on the whole, quite satisfactorily. For the next two months there was no difference visible, but towards the end of April these began to show. The oxide seemed, at first, to improve the crop, especially the higher amount of Stannic oxide. Later on, however, this was not noticeable. In the case of the chlorides, while the Stannous chloride seemed to show no injury, the higher quantity of Stannic chloride ( $\cdot 10$  per cent.) killed some of the plants and injured others. The sulphates seemed to improve the crop, the improvement increasing with the concentration. When nearly ripe, the crops were photographed, and then subsequently harvested and threshed on October 19. The results are given in Table I, page 269.

The general results, which are borne out by the appearances of the crops themselves in Plate I, indicate that the Stannic salts were decidedly more marked than the Stannous in their influence in either stimulating the crop or in producing a toxic effect upon it, and further, that the chlorides had a more marked effect than the oxides. With the oxides, as used in the quantities stated, no marked differences were noticeable until  $\cdot 10$  per cent. was reached, when a slight depression in the crop was obtained. With Stannous chloride there was a gain in all cases, this increasing with the amount and being most marked where up to  $\cdot 10$  per cent. was used (see pot 16, Plate I). A similar gain was found with Stannic chloride in the lower amounts, but, when the quantity reached  $\cdot 10$  per cent. Sn, there was a marked depression, little more than a half crop being obtained. This is clearly brought out by the appearance of pot 23, Plate I. As regards the sulphates, there was no gain from the Stannous sulphate, indeed, in some cases a depression; but with Stannic sulphate there was a gain of crop in each case, this reaching a quite material one where  $\cdot 10$  per cent. Sn was used (see pot 31, Plate I). It would seem, from a consideration of the above, that the respective influences on the crop were determined rather by the acid radical than by the metal itself. Indeed, there is no instance in which the influence on the crop can be directly traced to the presence of the metal, tin, or to any particular amount of it. It was otherwise with regard to the acid radical. In the case of the chlorides, for example,  $\cdot 10$  per cent. Sn, in the form of Stannous chloride, contained no more chlorine than did  $\cdot 05$  per cent. as Stannic chloride, but when the amount of the latter salt was increased to  $\cdot 10$  per cent. Sn, then a toxic point was reached, this, however, being due to the chlorine and not to the

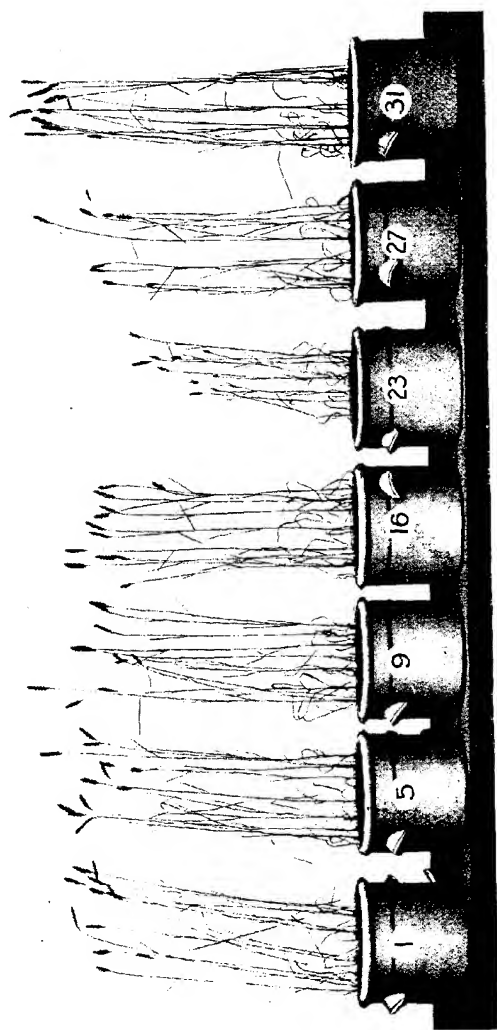


FIGURE 1. The influence of Tin compounds on Wheat, 1920.  
 (a) untreated; (b) .10 per cent. of Tin as Stannous oxide; (c) .10 per cent. as Stannous chloride; (d) .10 per cent. as Stannous chloride; (e) .10 per cent. as Stannous sulphate; (f) .10 per cent. as Stannous sulphate; (g) .10 per cent. as Stannous sulphate.

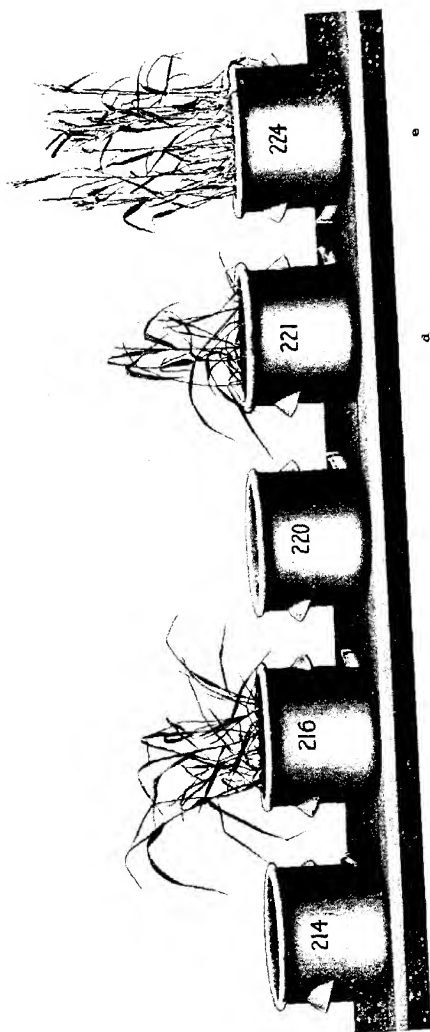


PLATE 2.—The Influence of Chromate and Bichromate of Potash on Barley, 1920.  
 (a) 0.1 per cent. of Chromium only; (b) 0.05 per cent. of Chromium only; (c) 0.1 per cent. of Chromium,  
 and (d) 0.05 per cent. of Bichromate of Potash; (e) untreated.

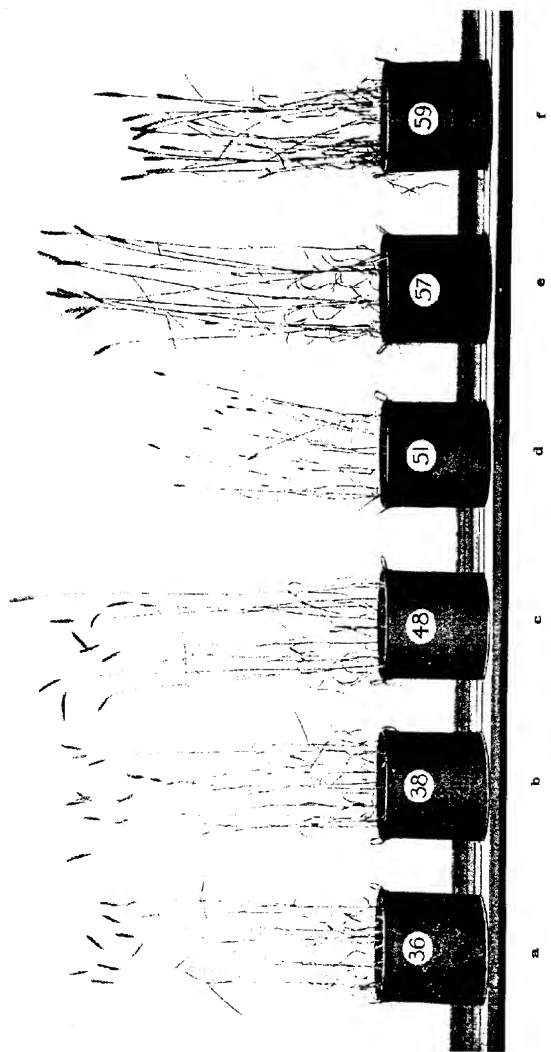


PLATE 3.—The Influence of Ferrous sulphate and Lime upon Wheat, 1920.  
 (a) untreated; (b) .1 per cent. of Iron as Ferrous sulphate; (c) Lime a one—one equivalent; (d) .2 per cent. of Iron as Ferrous sulphate;  
 (e) the same with 2 equivalents of Lime; (f) 2 equivalents of Lime alone.



tin. This was not the case with the  $\text{SO}_3$  radical, as the increase with this has been good and a toxic point not reached.

The general conclusions may be summed up as follows:—

1. Tin as a metal appears to have no direct action upon vegetation. Where differences are shown, when using various compounds of tin, these differences are due to the acid radical contained and not to the metal.

2. The oxides of tin show no marked influence one way or the other up to .10 per cent. Sn.

3. The chlorides of tin have a favourable influence up to .10 per cent. Sn. as Stannous chloride, but with Stannic chloride only up to .05 per cent. Sn, .10 per cent. Sn being in this form distinctly toxic.

4. Stannous sulphate has no effect when used up to .10 per cent. Sn, but Stannic sulphate at this concentration of .10 per cent. Sn is distinctly beneficial.

TABLE I.—*Compounds of Tin on Wheat, 1920.*

Treatment			Corn	Straw
No treatment			100	100
Stannous oxide ( $\text{Sn O}$ )	containing .05 per cent. Sn		105.9	98.9
" "	.10	" "	109.2	106.3
Stannic oxide ( $\text{Sn O}_2$ )	.05	" "	108.9	101.5
" "	.10	" "	84.8	96.8
Stannous chloride ( $\text{Sn Cl}_2 \cdot 2\text{H}_2\text{O}$ )	.025	" "	133.9	102.2
" "	.05	" "	137.0	107.8
" "	.10	" "	153.6	113.8
Stannic chloride ( $\text{Sn Cl}_4 \cdot 5\text{H}_2\text{O}$ )	.025	" "	131.8	105.1
" "	.05	" "	142.8	113.0
" "	.10	" "	56.4	60.6
Stannous sulphate ( $\text{Sn SO}_4$ )	.05	" "	77.0	83.9
" "	.10	" "	60.7	75.6
Stannic sulphate ( $\text{Sn. (SO}_4)_2$ )	.05	" "	111.0	113.4
" "	.10	" "	140.6	140.9

(b) *The Action of Chromium Salts upon Barley.*

Chromium seems to be a metal the influence of which on vegetation has not so far been studied. And, yet, experiments on this question claim some practical application inasmuch as salts of chromium are used in certain tanning processes (chrome leather), and the effluents from works where these processes are carried on may find their way on to land, sewage farms, &c. It seemed to me, therefore, a fitting subject for study in connection with the work of the Hills' Trust.

The experiments of 1920 were begun late and were of a purely tentative character; barley, because of the lateness of the



season, was selected as the crop. The compounds first tried were the chromate and bichromate of potash, these being used, to start with, in amounts to supply .05 and .10 per cent. of chromium respectively.

The soil was from Stackyard Field, and the applications were, in the first instance, mixed with the top 10 in. of soil. The first noticeable result was that the barley plants appeared in the untreated pots only. Chromate and bichromate, in the quantities given, effectually killed the seeds and prevented germination.

It was further noticed that the chromium salts worked their way up to the surface of the soil and formed regular incrustations on it. The experiment was then restarted on May 17, barley being again sown, and the quantities of chromate and bichromate were reduced so as to supply .025, .01, and .005 per cent. of chromium respectively. The salts were, in this case, mixed with the whole of the soil in either pot. The plants came up well in the untreated pots, but in none of the others were there more than a few very feeble plants. By June 10, the untreated plants were 6 in. high, but in none of the other pots were they above 2 in. in height. With the chromate .025 per cent., out of forty seeds sown in the two duplicate pots, none appeared; with .01 per cent., seven plants; with .005 per cent. twenty-six plants came. With the bichromate, no plants at all appeared when .025 per cent. was given; twenty-one plants came with .01 per cent.; and twenty-three plants with .005 per cent. These appearances are shown in Plate II. None of the treated plants ever reached more than a height of 4 in., and in no case were ears formed.

It is clear from this experiment that chromium as chromate or bichromate of potash is extremely toxic, so little as .005 per cent. of chromium in these forms effectually preventing the growth of barley.

It will be necessary to restart this experiment, beginning with still smaller amounts of chromium, and this is comprised in the work for 1921.

## II. *The Relative Effects of Lime and Chalk.*

These experiments, begun in 1919, and the counterpart of the liming experiment in Stackyard Field (see page 264), were continued for the second year, the original pots with the same applications being used. Wheat was sown, barley having been the crop of 1919. The soil (from Stackyard Field), contained lime .233 per cent., magnesia .122 per cent., and organic matter 3.29 per cent. The experiments were, as before, in duplicate. At the end of 1919 the soil was turned out of each pot then used, well mixed, and returned to its own pot.

In Table II are also given, for purposes of comparison, the results obtained with the barley crop in 1919.

The roots were also examined: in the lime series the different

lots showed an increased fibrous growth, but with the chalk this was not noticeable.

It would certainly seem as if lime had acted more expeditiously, as a neutraliser of the soil and as a crop producer, than did chalk; also, that 10 cwt. per acre of chalk, or, at least, 1 ton of this per acre, had proved as effective for correction of acidity and crop production as did the higher quantities of it.

At the end of the season the soils were turned out and examined in order to see what was the lime requirement of each after the growing of this second crop. The determinations were made and are set out in Table III, the figures of 1919 (after one crop) being given also by way of comparison.

TABLE III.—*Lime Requirement in Soils after application of Lime and Chalk.*

	1919 (After one crop) $\text{CaCO}_3$ required to neutralise	1920 (After two crops) $\text{CaCO}_3$ required to neutralise
	Per cent.	Per cent.
Original soil (at commencement) . . . . .	-095	
No lime added . . . . .	-095	-045
Lime—10 cwt. per acre . . . . .	-085	-035
" 1 ton " " . . . . .	-075	-035
" 2 tons " " . . . . .	-065	-025
" 3 " " " . . . . .	-045	-020
" 4 " " " . . . . .	-035	-020
Chalk= $\text{CaO}$ —10 cwt. per acre . . . . .	-065	-035
" " 1 ton " " . . . . .	-035	-032
" " 2 tons " " . . . . .	-035	-030
" " 3 " " " . . . . .	-035	-025
" " 4 " " " . . . . .	-025	-025

There is a striking drop all through, and this, occurring with the unlimed plots too, is very hard to explain. The results, it may be said, have been verified by repetition. The reduction of acidity in the case of the lime has been more marked than in that of the chalk. The ultimate results, as regards acidity, after two crops have been grown, are much the same whether lime or chalk had been used.

### III. *The Effect of Ferrous Oxide on Wheat.*

In previous experiments (1918) conducted at the Pot-culture Station some remarkable results attended the application of ferrous oxide to wheat, these indicating that an acid condition of the soil was set up which was harmful in nature. A question

arose out of this—on a suggestion made to me by Dr. Geo. McGowan—whether, if lime were added to neutralise this, the iron salts would still prove harmful or would now be rendered effective. The present experiment was designed with this purpose.

It was decided to use  $\text{FeSO}_4$  containing .1 and .2 per cent. Fe reckoned on the whole soil with which it was mixed, and to add lime (as  $\text{CaO}$ ) in different quantities so as to half neutralise, fully neutralise, and over neutralise the acidity. Simultaneously, for comparison, the effect of lime alone, in these different quantities, was tried.

The soil was from Stackyard Field (analysis, see page 270); iron was applied as  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  so as to form, with the lime, Ferrous hydroxide in the soil.

Wheat was sown December 23, 1919. In the germination there was a marked retarding effect shown where Fe .2 per cent. was used alone, though, eventually, nearly all the plants came. These were thinned out, as usual, to twelve plants per pot. The harmful effect of the higher quantity of Fe continued to be marked, and by the end of March the plants seemed to be dying, though later on they recovered somewhat. This set clearly showed a toxic effect from the higher amount of Fe, but it was the only one in the whole series that markedly exhibited this. This is brought out by the appearances of the crop as given in Plate III. The harvest results are given in Table IV.

TABLE IV.—*Ferrous Oxide on Wheat, 1920.*

Treatment	Corn	Straw
Untreated . . . . .	100	100
$\text{FeSO}_4$ containing .1 per cent. Fe . . . . .	137.5	111.9
$\text{FeSO}_4$ " .1 per cent. Fe, with half equivalent of Lime . . . . .	135.7	116.1
" " .1 per cent. Fe, with full equivalent of Lime . . . . .	115.6	95.5
" " .1 per cent. Fe, with double equivalent of Lime . . . . .	184.3	125.1
$\text{CaO}$ alone, half equivalent (Fe .1 per cent.) . . . . .	118.7	99.1
" " full " " . . . . .	162.0	125.3
" " double " " . . . . .	227.8	170.7
$\text{FeSO}_4$ containing .2 per cent. Fe . . . . .	37.0	52.5
" " .2 per cent. Fe, with half equivalent of Lime . . . . .	137.7	115.2
" " .2 per cent. Fe, with full equivalent of Lime . . . . .	68.1	75.1
" " .2 per cent. Fe, with double equivalent of Lime . . . . .	215.8	156.0
$\text{CaO}$ alone, double equivalent of Lime . . . . .	170.2	173.3

As regards the application of the lower amount of Fe, it will be seen that this, when used alone, gave a certain amount of increase, one exceeded, however, by the double equivalent of lime. On the other hand, there was a strange and unexplainable reduction when the full equivalent of lime was used. This was not confined to one pot, but the duplicates agreed closely, and the same anomaly was found when the larger amount of Fe was used.

The effect of applying lime alone, however, showed that better results are obtained from lime by itself than from the same amount of lime used with .1 per cent. Fe. With the double amount of Fe there was a great falling off, as the photograph shows, but this was remedied by lime, more especially when used in the higher amounts. The better tillering of the lime sets is also indicated in the photograph.

This experiment presents several anomalies which it will be well to verify by continuing it for another year, and this is being done.

Meantime, one cannot say much more than that ferrous oxide containing .1 per cent. Fe, has not shown itself to be harmful, but in amount containing .2 per cent. Fe, it is distinctly so; and that lime, generally speaking, will remedy the injury done, though without showing any marked benefit to result from the use of the ferrous oxide.

#### IV. *The Influence of Silicates on Wheat.*

In consequence of some results obtained in 1916 which seemed to indicate that magnesium silicate benefited wheat, it was resolved to carry out further investigations on the subject. The selected materials were calcium silicate, magnesium silicate, and aluminium silicate. There was an objection to using potassium and sodium silicates because of the excessive alkalinity of these and the impossibility of neutralising them while still retaining the silica. There being also difficulty in getting aluminium silicate free from ammonia, the natural material, Kaolin, was used, the calcium and magnesium silicates employed being the chemically prepared bodies.

The soil was from Stackyard Field (analysis, see page 270), and the several applications were made at the rates of 1 ton, 2 tons and 4 tons per acre, the materials being mixed with the whole of the soil.

Wheat was sown on December 17. There was nothing noticeable in regard to germination, and all the plants grew well. During the growth of the crops the only point to note was that the calcium silicate series took a lead of the others, and that magnesium silicate developed, with the heavier dressings, the

same deep green appearance which had previously been noticed.

The pots were photographed on August 6, the crop harvested on August 9 and threshed. The comparative weights are given in Table V.

TABLE V.—*Silicates upon Wheat, 1920.*

Treatment		Corn	Straw
Untreated		100	100
Calcium Silicate, 1 ton per acre		113.4	104.1
" " 2 tons " "		124.4	116.8
" " 4 " " "		150.1	139.0
Magnesium Silicate, 1 ton per acre		111.9	115.1
" " 2 tons " "		109.5	124.5
" " 4 " " "		113.5	135.4
Kaolin, 1 ton " "		83.8	104.3
" 2 tons " "		96.5	100.3
" 4 " " "		103.0	96.8

The roots, on being examined, showed no particular differences.

The general results obtained indicated a decided improvement in the case of calcium silicate when used in the higher amount (4 tons per acre), the increase reaching 50 per cent. With the 2 tons per acre of calcium silicate the gain was much less marked (24 per cent. only). In no other case throughout the series was there any increase more than would be accounted for by experimental error. From this it might well be concluded that the presence of lime in a soil, in forms other than the carbonate, has to be taken into account when considering the lime needs thereof; and it would seem more than likely that lime, even when converted into the more insoluble condition of calcium silicate, yet exercises a beneficial influence. In the opinion of some, it is only the lime occurring as carbonate that counts; this view I, myself, have never held, but believe that the total lime, be it present as oxide, nitrate, carbonate, sulphate, or even as silicate, is the deciding factor when considering whether a soil needs lime or not.

The foregoing would appear to strengthen this latter view.

The general conclusions from this work are:—

1. That calcium silicate, used in quantity up to 4 tons per acre, produces a decidedly beneficial effect upon the wheat crop.
2. That magnesium silicate is without influence.
3. That kaolin (aluminium silicate) is also without effect.

V.—*The Relative Effects of Chemically Prepared and Natural Forms of Magnesium Carbonate.*

In previous experiments with magnesia and magnesium carbonate it had been the practice to employ the chemically prepared substances, as these were obtainable in a pure form. A suggestion, however, arose whether the same results would have been obtained had the natural substances instead of the chemically prepared ones been used. It was, accordingly, determined to try this question, and, in 1920, experiments were conducted on wheat, employing magnesium carbonate in the naturally occurring forms of magnesite and dolomite, as well as in the chemically prepared form.

It was further decided to carry the experiment out on both winter-sown and spring-sown wheat, in order to see whether any differences were shown between the two sets.

The soil was from Stackyard Field and contained .23 per cent. of CaO, and .13 per cent. of MgO. The chemically prepared magnesium carbonate contained 46.16 per cent. of MgO, the magnesite 46.56 per cent. MgO, and the dolomite 20.88 per cent. MgO with 30.14 per cent. CaO. Each material was used at rates which represented, respectively, 1 ton, 2 tons, 4 tons and 6 tons of magnesium carbonate per acre.

The winter-sown wheat was put in on December 23-24, 1919, and the spring-sown on March 17-18, 1920.

Owing to the wheat plants being, in several cases, badly attacked by a fungus, and owing to other irregularities which occurred, the quantitative results cannot be taken as more than approximately correct; they are, therefore, not put out in detail here, but the experiment will be repeated another year. It will be sufficient to indicate the general conclusions so far as these were obtained.

As regards germination, there were no differences to record. Taken as a whole, the effect of the addition of magnesium was generally to produce a deep green colour of stem and leaf. At first it seemed as if the heavier dressings (4 tons and 6 tons per acre) were exercising a toxic effect not noticeable with the smaller amounts, but these passed off as the plants grew older. The striking feature was that the winter-sown crop was very different to the spring-sown one, for, while in the former the addition of magnesium carbonate showed an increase of crop with all three forms of magnesium carbonate, in the spring-sown wheat these increases were entirely absent, none of the applications effecting any improved yield either of corn or straw. It may, accordingly, be concluded that with the spring-sown wheat there was not a sufficiently long period of growth for the influence of the magnesium carbonate to "tell." With the winter-sown wheat, how-

ever, the chemically prepared magnesium carbonate gave increased yield in each case, this increasing with the application; with the dolomite (which, it must be remembered, contained a large amount of lime also) there was uniform increase, though not to so large an extent as with the chemically prepared substance; while magnesite, though it similarly gave an increase in all cases, did not do so to as marked an extent as did the other two forms.

For the reasons above given, the quantitative results are not set out, and the experiment will be repeated later. It is quite possible, indeed, that the superior working of the chemically prepared magnesium carbonate was due to its finer state of division (through being precipitated), as compared with the natural minerals merely in the ground state.

#### VI.—*The Influence of Sulphur on Crops.*

A good deal having been communicated to us, chiefly from America, as to the wonderful effects of sulphur as an application for crops such as Lucerne, it was decided to carry out in 1920 some experiments with this substance.

The crops selected were (a) Mustard, (b) Red Clover, (c) Lucerne. Sulphur was used in the form of flowers of sulphur, and was mixed with the entire soil in each pot. It was given in the quantities of 1 cwt. and 2 cwt. per acre respectively on April 19, 1919; it was then left for a time in order to enable any action that might ensue from the mixing to do so before the seed was sown. Sowing took place on May 18. In addition to the above, there were extra pots sown with Lucerne and to which lime alone, or sulphur mixed with lime, was given, the lime being at the rate of 2 tons per acre.

The germination did not, in any case, show points of interest. The first crops were duly cut green when flowering was general and a second crop thereafter grown. The dry matter was estimated in each crop and the results are set out in terms of this.

With the Mustard there was a small increase in the first crop, as more sulphur was used; but in the second crop the tendency was in the opposite direction, and when the totals of the two crops were taken there was nothing in favour of the use of sulphur.

In the case of the Red Clover, no beneficial influence was seen in either the first or second crop; the differences were not outside the range of experimental error.

With Lucerne, when sulphur was used alone, there was absolutely no difference in either the first or second crop, and the sulphur was clearly without effect. By using lime (2 tons per acre) on the Lucerne, however, the result obtained was a one-third larger crop, the addition of sulphur to the lime making but slight difference.



The results, stated in terms of the dry matter, are set out in Table VI.

TABLE VI.—*Sulphur on Mustard, Red Clover, and Lucerne, 1920.*

Crop	Treatment	Dry Matter		
		1st Crop	2nd Crop	Total Crop
		grammes	grammes	grammes
Mustard	No Treatment . . . . .	33.54	9.40	42.94
	Sulphur 1 cwt. per acre . . . . .	37.62	10.13	47.75
Red Clover	" 2 " " " " " "	38.58	6.98	45.56
	No Treatment . . . . .	37.16	30.96	68.12
Lucerne	Sulphur 1 cwt. per acre . . . . .	31.69	32.51	64.20
	" 2 " " " " " "	36.11	25.84	61.95
	No Treatment . . . . .	19.26	11.85	31.11
	Sulphur 1 cwt. per acre . . . . .	19.34	10.73	30.07
	" 2 " " " " " "	19.24	11.02	30.26
	Lime 2 tons " " " " " "	22.76	18.56	41.32
	(Lime 2 " " " " " ) Sulphur 2 cwts. ] per acre . . . . .	23.98	18.70	42.68

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MATHEWS, ERNEST ( <i>Chairman</i> ).	COMBES, D., Junr.	OLIVER-BELLASIS, Capt. R.
PARKER, Hon. C. T.	CRUTCHLEY, PERCY.	OVERMAN, HENRY.
BURRELL, Sir MERRIK R., Bart.	EVENS, JOHN.	PLUMPTRE, H. F.
	FITZHERBERT.	SILCOCK, T. B.
THOROLD, Sir J. H., Bart.	BROCKHOLES, W.	SMITH, FRED.
CARR, RICHARDSON.	GREAVES, R. M.	WHEELER, Col.

**Special Committee.**

DEVONSHIRE, Duke of ( <i>Chairman</i> ).	ADEANE, C.	HARRISON, W.
NORTHBROOK, Earl of.	AYELING, T. L.	MATHEWS, ERNEST.
FELLOWES, Sir A. E.	*BIFFEN, Prof. R. H.	*NUTTALL, Prof.
BOWEN-JONES, Sir J. B., Bart.	CARR, RICHARDSON.	REYNARD, F.
	COLTMAN-ROGERS, C.	TINDALL, C. W.
	*COOPER, W. F.	*VOELCKER, Dt. J. A.
GREENALL, Sir G., Bart.	CORNWALLIS, Col.	*WARBURTON, C.
THOROLD, Sir J. H., Bart.	CRUTCHLEY, PERCY.	WHEELER, Col.
*McFADYEAN, Prof. Sir J.	GREAVES, R. M.	*WOOD, Prof. T. B.

\* *Scientific Members of Special Committee not Members of Council.*

## *Standing Committees.*

v

### Emergency Committee.

ADEANE, C. ( <i>Chairman</i> ).	CARR, RICHARDSON.	MIDDLETON, C.
PORTLAND, Duke of.	CORNWALLIS, Col.	OVERMAN, H.
RICHMOND AND GORDON,	Evens, JOHN.	PATTERSON, R. G.
Duke of.	HOWARD, J. HOWARD.	ROWELL, JOHN.
NORTHBROOK, Earl of.	LUDDINGTON, J. L.	TINDALL, C. W.
GREENALL, Sir G., Bart.	MANSELL, ALFRED.	PRICE, F. HAMLYN
THOROLD, Sir J. H., Bart.	MATHEWS, ERNEST.	( <i>Hon. Secretary</i> ).

### General Derby Committee.

The Whole Council, with the following representatives of the Local Committee :—

MAYOR OF DERBY.	ANN, H. T.	WRIGHT, Capt. H. F.
DEPUTY MAYOR OF DERBY.	COTTON, JOHN.	LEE, G. TREVELYAN
Ald. The Rt. Hon. LORD HART, Alderman W.		( <i>Town Clerk and</i>
ROE, J.P.	SITWELL, E. S. WILMOT.	<i>Local Secretary</i> ).
BURDETT, Sir FRANCIS, Bt. SMITH, ANDREW.		

Honorary Director.—Sir GILBERT GREENALL, Bart., C.V.O.

Secretary.—T. B. TURNER, 16, Bedford Square, W.C.1.

*Editor of Journal*.—C. S. ORWIN, M.A., *Agricultural Economics Institute, Oxford.*

*Honorary Librarian*.—F. HAMLYN PRICE, 7, *Harley Gardens, S.W.10.*

*Consulting Chemist*.—Dr. J. AUGUSTUS VOELCKER, M.A., 1, *Tudor St., E.C.4.*

*Consulting Veterinary Surgeon*.—Prof. Sir JOHN McFADYEAN, *Royal Veterinary College, Camden Town, N.W.1.*

*Botanist*.—Prof. R. H. BIFFEN, F.R.S., *School of Agriculture, Cambridge.*

*Zoologist*.—CECIL WARBURTON, M.A., *School of Agriculture, Cambridge.*

*Consulting Engineer*.—F. S. COURTNEY, 25, *Victoria Street, Westminster, S.W.1.*

*Surveyor*.—J. R. NAYLOR, F.R.I.B.A., *Smith's Bank Chambers, Derby.*

*Publisher*.—JOHN MURRAY, 50A, *Albemarle Street, W.1.*

*Solicitors*.—GARRARD, WOLFE, GAZE & CLARKE, 13, *Suffolk Street, S.W.1.*

*Bankers*.—LONDON COUNTY WESTMINSTER & PARIS BANK, *St. James's Square.*

DISTRIBUTION OF GOVERNORS AND MEMBERS OF THE  
SOCIETY, AND OF ORDINARY MEMBERS OF THE COUNCIL.

ELECTORAL DISTRICT	DIVISION	NUMBER OF GOVERNORS AND MEMBERS	NUMBER OF ORDINARY MEMBERS OF COUNCIL	ORDINARY MEMBERS OF COUNCIL
A.	BEDFORDSHIRE . . . . .	82	1	J. H. Howard.
	CHESHIRE . . . . .	526	3	Hon. J. E. Cross; Capt. W. H. France-Hayhurst; G. Norris Midwood.
	CORNWALL . . . . .	110	1	Brooking Trant.
	DERBYSHIRE . . . . .	208	1	J. T. C. Eadie.
	DURSET . . . . .	102	1	A. Hiscock.
	HAMPSHIRE AND CHANNEL ISLANDS . . . . .	370	2	J. Falconer; Capt. Percy Seward.
	HERTFORDSHIRE . . . . .	220	1	Richardson Carr.
	LANCASHIRE AND ISLE OF MAN . . . . .	497	3	W. Fitzherbert-Brockholes; W. Harrison; T. B. Silcock.
	MIDDLESEX . . . . .	114	1	A. W. Perkin.
	MONMOUTHSHIRE . . . . .	109	1	Col. Edward Curte.
	NORFOLK . . . . .	478	2	Davis Brown; Henry Overman.
	NORTHAMPTONSHIRE . . . . .	213	1	F. H. Thornton.
	NORTHUMBERLAND . . . . .	328	2	G. G. Rea; A. H. Ridley.
	STAFFORDSHIRE . . . . .	317	2	John Myatt; B. G. Patterson.
	WORCESTERSHIRE . . . . .	210	1	Col. E. V. V. Wheeler.
	YORKSHIRE, N.R. . . . .	303	2	Major Olive Behrens; C. W. Walker-Tisdale.
	SCOTLAND . . . . .	250	1	A. M. Montgomery.
		—1 441	—26	
B.	BUCKINGHAMSHIRE . . . . .	163	1	G. H. Harris.
	DEVON . . . . .	197	1	Andrew Rogers.
	DURHAM . . . . .	283	1	C. Middleton.
	ESSEX . . . . .	237	1	Sir Walter Gilbey.
	HEREFORDSHIRE . . . . .	164	1	A. P. Turner.
	LEICESTERSHIRE . . . . .	166	1	Sir A. G. Hazlerigg.
	LONDON . . . . .	586	3	W. W. Chapman; Sir Howard Frank; F. Hamlyn Price.
	NOTTINGHAMSHIRE . . . . .	194	1	C. M. S. Pilkington.
	RUTLAND . . . . .	26	1	
	SHROPSHIRE . . . . .	428	2	Lord Harlech; Alfred Mansell.
	SUFFOLK . . . . .	256	1	Fred Smith.
	SURREY . . . . .	244	1	Major Dunbar Kelly.
C.	WILTSHIRE . . . . .	220	1	D. Combes, junr.
	YORKSHIRE, W.R. . . . .	292	2	Major G. R. Lane-Fox; C. Howard Taylor.
	SOUTH WALES. . . . .	169	1	Col. C. Venables Llewelyn.
		—3,727	—19	
	BERKSHIRE . . . . .	194	1	Sir W. A. Mount.
	CAMBRIDGESHIRE . . . . .	222	1	J. L. Luddington.
	CUMBERLAND . . . . .	103	1	Joseph Harris.
	GLAMORGAN . . . . .	212	1	D. T. Alexander.
	GLOUCESTERSHIRE . . . . .	352	2	H. D. Brocklehurst; R. Gray.
	HUNTINGDONSHIRE . . . . .	48	1	John Rowell.
	KENT . . . . .	409	2	T. L. Aveling; H. F. Plumpton.
	LINCOLNSHIRE . . . . .	339	2	John Evens; C. W. Tindall.
.	OXFORDSHIRE . . . . .	196	1	Robert Hobbs.
	SOMERSET . . . . .	198	1	Lord Strachle.
	SUSSEX . . . . .	343	2	U. Roland Burke; Sir Merrick R. Burrell.
	WARWICKSHIRE . . . . .	238	1	Capt. R. Oliver-Bellasis.
	WESTMORLAND . . . . .	91	1	Lord Henry Bentinck.
	YORKSHIRE, F.R. . . . .	164	1	Capt. T. L. Wickham-Boynston.
	IRELAND . . . . .	111	1	Right Hon. F. Wrench.
	NORTH WALES. . . . .	280	1	A. E. Evans.
		—3,560	—20	
FOREIGN COUNTRIES . . . . .		264		
MEMBERS WITH NO ADDRESSES . . . . .		28		
GRAND TOTALS. . . . .		12,020	65	

TABLE SHOWING THE NUMBER OF GOVERNORS AND MEMBERS  
IN EACH YEAR FROM THE ESTABLISHMENT OF THE SOCIETY.

Year ending with show of	President of the Year	Governors		Members		Total
		Life	Annual	Life	Annual Honorary	
1830	3rd Earl Spencer . . . . .	—	—	—	—	1,100
1840	5th Duke of Richmond . . . . .	86	139	146	2,434	2,890
1841	Mr. Philip Pusey . . . . .	91	219	231	4,047	4,595
1842	Mr. Henry Handley . . . . .	101	211	328	5,194	5,849
1843	4th Earl of Hardwicke . . . . .	94	209	429	6,155	6,802
1844	3rd Earl Spencer . . . . .	95	214	443	6,161	6,927
1845	5th Duke of Richmond . . . . .	94	198	527	5,899	6,735
1846	1st Viscount Portman . . . . .	92	201	554	6,105	6,971
1847	6th Earl of Egmont . . . . .	81	195	607	5,478	6,391
1848	2nd Earl of Yarborough . . . . .	93	180	648	5,887	6,535
1849	3rd Earl of Chichester . . . . .	89	178	582	4,643	5,512
1850	4th Marquis of Downshire . . . . .	90	169	627	4,855	5,261
1851	5th Duke of Richmond . . . . .	91	162	674	4,175	5,121
1852	2nd Earl of Ducie . . . . .	93	156	711	4,002	4,981
1853	2nd Lord Ashburton . . . . .	90	147	739	3,923	4,923
1854	Mr. Philip Pusey . . . . .	88	146	771	4,152	5,177
1855	Mr. William Miles, M.P. . . . .	89	141	795	3,838	4,862
1856	1st Viscount Portman . . . . .	85	139	859	3,890	4,979
1857	Viscount Ossington . . . . .	83	137	890	3,933	5,068
1858	6th Lord Bernal . . . . .	81	133	904	4,010	5,146
1859	7th Duke of Marlborough . . . . .	78	130	927	4,004	5,161
1860	5th Lord Westmorland . . . . .	72	119	927	4,047	5,183
1861	3rd Earl of Powis . . . . .	84	99	1,113	3,328	4,633
1862	H.R.H. The Prince Consort (1st Viscount Portman . . . . .)	83	97	1,151	3,475	4,823
1863	Viscount Eversley . . . . .	80	88	1,263	3,795	5,183
1864	2nd Lord Feversham . . . . .	78	45	1,343	4,013	5,496
1865	Sir R. C. Kerrison, Bart., M.P. . . . .	70	81	1,380	4,190	5,752
1866	1st Lord Tredegar . . . . .	79	84	1,395	4,049	5,622
1867	Mr. H. S. Thompson . . . . .	77	82	1,398	3,903	5,485
1868	5th Duke of Richmond . . . . .	75	74	1,409	3,888	5,461
1869	H.R.H. The Prince of Wales, K.G. . . . .	75	73	1,417	3,864	5,446
1870	7th Duke of Devonshire . . . . .	74	74	1,511	3,764	5,436
1871	6th Lord Vernon . . . . .	72	74	1,589	3,896	5,648
1872	Sir W. W. Wynn, Bart., M.P. . . . .	71	73	1,655	3,959	5,788
1873	Earl Cathcart . . . . .	74	62	1,532	3,636	5,916
1874	Mr. Edward Holland . . . . .	76	58	1,944	3,756	5,846
1875	Viscount Bridport . . . . .	79	79	2,058	3,913	6,145
1876	2nd Lord Chesham . . . . .	83	78	2,104	4,013	6,345
1877	Lord Skelmersdale . . . . .	81	72	2,220	4,073	6,466
1878	Col. Kingcoote, C.B., M.P. . . . .	81	72	2,328	4,130	6,637
1879	H.R.H. The Prince of Wales, K.G. . . . .	81	72	2,453	4,700	7,332
1880	9th Duke of Bedford . . . . .	83	70	2,673	5,083	7,929
1881	Mr. William Wells . . . . .	85	69	2,765	5,041	8,079
1882	Mr. John Dent Dent . . . . .	82	71	2,849	5,059	8,090
1883	6th Duke of Richmond and Gordon . . . . .	78	71	2,979	4,952	8,099
1884	Sir Brandreth Gibbs . . . . .	72	72	3,203	5,408	8,778
1885	Sir M. Lopes, Bart., M.P. . . . .	71	69	3,356	5,619	9,335
1886	H.R.H. The Prince of Wales, K.G. . . . .	70	61	3,414	5,569	9,134
1887	Lord Egerton of Tatton . . . . .	71	64	3,440	5,387	8,982
1888	Sir M. W. Ridley, Bart., M.P. . . . .	66	56	3,521	5,225	8,884
1889	H.R. MAJESTY QUEEN VICTORIA . . . . .	73	58	3,597	7,133	15,360
1890	Lord Moreton . . . . .	122	58	3,846	6,941	17,106
1891	2nd Earl of Ravensworth . . . . .	117	60	3,811	6,921	19,028
1892	1st Earl of Feversham . . . . .	111	69	3,784	7,039	20,105
1893	1st Duke of Westminster, K.G. . . . .	107	74	3,786	7,138	21,126
1894	8th Duke of Devonshire, K.G. . . . .	113	73	3,798	7,212	22,118
1895	Sir J. H. Thorold, Bart. . . . .	120	80	3,747	7,179	23,114
1896	Sir Walter Gilbey, Bart. . . . .	126	83	3,695	7,233	23,118
1897	H.R.H. The Duke of York, K.G. . . . .	125	83	3,705	7,285	24,112
1898	5th Earl Spencer, K.G. . . . .	121	79	3,687	7,182	25,104
1899	Earl of Coventry . . . . .	119	75	3,656	7,009	23,107
1900	H.R.H. The Prince of Wales, K.G. . . . .	111	71	3,628	6,832	24,166
1901	3rd Earl Cawdor . . . . .	102	70	3,564	6,938	27,103
1902	H.R.H. Prince Christian, K.G. . . . .	100	69	3,500	6,955	26,155
1903	H.R.H. The Prince of Wales, K.G. . . . .	99	62	3,430	6,771	27,198
1904	10th Earl of Derby, K.G. . . . .	96	68	3,475	5,908	32,147
1905	Lord Middleton . . . . .	89	78	3,212	5,758	33,170
1906	Mr. F. S. W. Cornwallis . . . . .	94	155	3,132	6,189	30,600
1907	Earl of York and Albany . . . . .	91	74	3,076	6,229	30,669
1908	Duke of Devonshire . . . . .	89	178	3,019	6,442	30,758
1909	7th Earl of Jersey, G.C.R. . . . .	91	177	2,951	6,896	31,946
1910	Sir Gilbert Greenall, Bart. . . . .	86	166	2,878	6,934	31,109
1911	HIS MAJESTY KING GEORGE V. . . . .	85	168	2,806	7,191	30,179
1912	Lord Middleton . . . . .	85	170	2,741	7,285	30,180
1913	Earl of Northbrook . . . . .	89	168	2,691	7,474	26,144
1914	Earl of Powis . . . . .	89	173	2,626	7,620	26,154
1915	Duke of Portland, K.G. . . . .	88	184	2,517	7,313	26,130
1916	7th Duke of Richmond and Gordon, K.G. . . . .	83	185	2,427	7,526	27,104
1917	Mr. Charles Adeane, C.B. . . . .	93	210	2,412	8,214	26,105
1918	Hon. Cecil T. Parker . . . . .	102	224	2,895	8,228	25,107
1919	Sir J. B. Bowen-Jones, Bart. . . . .	119	236	2,411	8,558	24,114
1920	H.R.H. The Prince of Wales, K.G. . . . .	129	256	2,402	9,208	25,120



**STATEMENT made to the Council by the Chairman  
of the Finance Committee, on presenting the Accounts  
for the year 1920.**

Mr. ADEANE, in presenting, on behalf of the Finance Committee, the Accounts of the Society for the year 1920, said that the sudden rise in the cost of everything in the year 1920 completely upset all estimates, and the Royal Agricultural Society had suffered with other institutions of a similar nature. Fortunately, the Society had a profitable show at Cardiff, and was able to invest a considerable sum, increasing the Society's income by 450*l.* per annum. There had also been an increase in membership, and the subscriptions showed an additional 501*l.* Those were the only bright spots in the accounts which he had to lay before the Council.

The expenditure had gone up by leaps and bounds—general administration, 1,008*l.*, due to increases in the cost of printing and salaries; printing of Journal, 1,402*l.* The net cost of the trial of agricultural tractors exceeded the estimate by 1,304*l.* The result was that they had a debit balance on the ordinary account of 3,996*l.* The Council would notice that the expenditure included not only cash payments, but all liabilities in connection with the year's transactions; this especially applied to the Journal, and the figure 1,223*l.* was really an estimate. In the future the statement of ordinary income and expenditure would be a cash statement only.

With regard to the balance-sheet, the capital was reduced from 73,275*l.* to 59,993*l.*, showing a decrease of 13,282*l.*

Dealing with the financial position, the depreciation of the Society's investments by 6,085*l.* was negligible so long as they did not have to realize, as the Society's investments were in terminable securities. There remained the loss on the Darlington Show of 7,766*l.* and a debit balance on ordinary account of 3,996*l.*

With regard to the loss on the Show, this had been met out of funds at their disposal to the extent of 6,481*l.*, leaving on December 31st, 1920, a debit balance of 1,285*l.*, and this, with the debit balance on ordinary account of 3,996*l.*, gave the total liability of 5,281*l.* to be met during the current year. It was hoped that this liability would be met by the following amounts :—

	£
Contribution from ordinary account against loss on Show . . . . .	2,500
(This, of course, is contingent on there being no loss at Derby.)	
Reserve fund . . . . .	1,500
Credit balance on the ordinary account . . . . .	1,500
	5,500

He would be a bold man who would attempt to forecast any financial result at the present time. They were making every economy that was possible and reducing the cost of the Show. If the elements were kind the Society should come through all right.

But, after all, the real strength of the Society rested on the support which it received from the general body of agriculturists throughout the country.

In 1905 the membership stood at 9,170; to-day it was 12,272. It was still far short of what it should be, if any consideration was given to the great record which the Society had behind it and the work which still lay ahead, for in the improvement and maintenance of agriculture at a high level there could be no sitting by with folded hands.

He would appeal to members of the Council to do everything they could to increase the membership of the Society. It should be possible to bring at least 1,000 during the year. Agriculturists had always rallied to the Society in difficult times, and he had not the least doubt they would do so again.

Mr. ADEANE then presented the following estimate for the present year :—

#### FORECAST OF ORDINARY RECEIPTS AND EXPENDITURE FOR 1921.

(Other than in respect of the Show.)

Prepared by direction of the Finance Committee on the basis of the recommendations of September 21st, 1905 made by the Special Committee.

Actual Figures for 1920.		Receipts.	
£			£
10,488	From Subscriptions for 1921 of Governors and Members . . . . .		10,500
237	From interest on Daily Balances . . . . .		200
2,546	From interest on Investments . . . . .		2,546
637	From Sales of Text Book, Pamphlets, &c. . . . .		700
	(This does not include the sales of Journals which are deducted from the cost of production.)		
1,551	Receipts from Tractor Trials . . . . .		—
15,559			13,946
£		Expenditure.	£
2,416	Salary of Secretary and Official Staff . . . . .		2,899
140	Pensions to Officials . . . . .		440
1,099	Rent, Lighting, Cleaning, Wages, &c. (say) . . . . .		1,050
1,180	Printing and Stationery . . . . .		1,100
329	Postages and Telegrams . . . . .		330
408	Miscellaneous . . . . .		350
1,323	Journal . . . . .		1,200
722	Chemical Department . . . . .		715
150	Contribution to Woburn Farm . . . . .		150
239	Contribution to Hills' Bequest . . . . .		230
250	Botanical Department . . . . .		250
200	Zoological Department . . . . .		200
404	Veterinary Department . . . . .		206
53	Grant to Research Institute, University College, Reading . . . . .		100
188	Consulting Engineer . . . . .		52
2,500	Examinations for National Diploma (R.A.S.E. Share) . . . . .		220
	Amount set aside towards loss on Shows . . . . .		2,500
11,580			11,986
		Exceptional Expenditure.	
—	Legal Charges . . . . .		150
875	Reprint of Society's Text Book . . . . .		—
189	Emergency Committee . . . . .		—
206	Occasional Notes to Members . . . . .		—
50	Library—Binding of Books, &c. . . . .		100
10	Subscription to Conjoint Board of Scientific Societies . . . . .		—
1,833	Excess expenditure in production of Journal . . . . .		—
158	Printing Farm Account Books . . . . .		75
4,855	Trials of Agricultural Tractors . . . . .		—
19,556			12,311
	Estimated Receipts . . . . .		13,946
	Estimated Expenditure . . . . .		12,311
Debit Balance— 3,997	Estimated Receipts over Expenditure . . . . .		1,635

x      STATEMENT OF RECEIPTS AND EXPENDI-  
JUNE 29 TO

Correspond- ing figures for 1914.		Receipts.	£	s.	d.	£	s.	d.
2,000		Subscription from Town of Darlington . . . . .				2,000	0	0
2,951		Prizes given by Agricultural and Breed Societies . . . . .	2,824	5	0			
982		Prizes given by Darlington Local Committee . . . . .	1,890	0	0			
3,933						4,814	5	0
118		Contribution to Show Fund . . . . .				500	0	0
		<b>FEES FOR ENTRY OF IMPLEMENTS:—</b>						
7,524		Implement Exhibitors' Payments for Shedding . . . . .	10,151	10	9			
152		Non-Members' Fees for Entry of Implements . . . . .	227	0	0			
174		Fees for Entry of "New Implements" . . . . .	156	0	0			
7,850						10,534	10	9
		<b>FEES FOR ENTRY OF LIVE STOCK:—</b>						
3,155		By 2,871 Members' Entries @ 30s. . . . .	4,306	10	0			
31		16 Members' Entries @ 1l. . . . .	16	0	0			
152		478 Members' Entries @ 10s. . . . .	239	0	0			
3		40 Members' Entries @ 2/6 . . . . .	5	0	0			
5		28 Substituted Entries @ 5s. . . . .	7	0	0			
—		22 Nurse Cows @ 1l. . . . .	22	0	0			
657		343 Non-Members' Entries @ 3l. . . . .	1,029	0	0			
18		5 Non-Members' Entries @ 2l. . . . .	10	0	0			
52		47 Non-Members' Entries @ 15s. . . . .	35	5	0			
2		6 Substituted Entries @ 10s. . . . .	3	0	0			
577		Horse Boxes (530 @ 1l.; 108 @ 2l.) . . . . .	746	0	0			
4,652						6,418	15	0
		<b>FEES FOR ENTRY OF POULTRY:—</b>						
39		By Members:—313 Entries @ 4s. . . . .	62	12	0			
289		By Non-Members:—1,153 Entries @ 6s. . . . .	345	18	0			
328						408	10	0
		<b>OTHER ENTRY FEES:—</b>						
87		Produce . . . . .	121	8	0			
68		Rabbits . . . . .	147	14	0			
82		Horse-jumping Competitions . . . . .	53	0	0			
8		Timbering Competition . . . . .	—					
29		Plantation Competition . . . . .	27	18	0			
274						350	0	0
		<b>CATALOGUE:—</b>						
10		Extra Lines for Particulars of Implement . . . . .	11	7	0			
		Exhibits . . . . .	9	11	3			
27		Woodcuts of "New Implements" . . . . .	1,543	10	6			
804		Advertising in Catalogue . . . . .	47	5	6			
29		Sales of Implement Section of Catalogue . . . . .	1,780	1	7			
1,344		Sales of Combined Catalogue . . . . .	75	1	5			
20		Sales of Jumping Programme . . . . .				3,416	17	3
2,234						46	11	6
49		Less Commission on Sales . . . . .				3,370	5	9
2,185								
		<b>MISCELLANEOUS RECEIPTS:—</b>						
491		Admission to Flower Show . . . . .	791	9	6			
258		Garage . . . . .	581	3	8			
—		Sale of Old Entrances . . . . .	67	2	6			
94		Rent for Railway Offices . . . . .	90	0	0			
60		Premium for Cloak Rooms . . . . .	60	0	0			
30		Rent for Ministry of Agriculture Pavilion . . . . .	120	0	0			
187		Advertisements in Stock Prize Sheet . . . . .	177	16	10			
11		Advertisements in Showyard . . . . .	11	7	0			
—		Sale of Band Stand . . . . .	62	13	0			
12		Miscellaneous . . . . .	1	8	4			
1,143						1,963	0	10
£22,483		Carried forward . . . . .				£22,759	7	4

# TURE OF THE SHOW AT DARLINGTON, JULY 3, 1920

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Correspond-  
ing figures  
for 1919.

## **Expenditure.**

		COST OF ERECTION OF SHOWYARD :—		£ s. d.	£ s. d.
	£	Transferring Society's Permanent Buildings from Car-	diff to Darlington (including taking down and re-	erecting)	2,067 12 0
1,790	{	Fencing round Showyard . . . . .		1,141 0 10	
646		Implement Shedding . . . . .		3,267 14 9	
1,443		Stock Sheddling . . . . .		7,737 3 8	
3,396		Poultry and Produce Sheds . . . . .		656 10 7	
361		Rabbit Shed . . . . .		358 5 3	
220		Dairy . . . . .		512 13 11	
425		Fodder Shed and Office . . . . .		109 11 4	
109		Education and Forestry . . . . .		745 17 9	
473		Grand Stand and Large Ring . . . . .		802 6 4	
469		Various Offices and Stands . . . . .		1,582 18 2	
727		Painting Signs and fixing do., Fencing and Judging Rings . . . . .		950 17 3	
521		Insurance . . . . .		62 13 9	
40		Ironmongery . . . . .		153 15 3	
270		Hire of Canvas . . . . .		2,339 13 0	
1,423		New Timber . . . . .		7,528 13 1	
1,726		General Labour and Horse Hire (including Society's)		5,031 8 6	
4,933	{	Clerk of Works . . . . .		358 12 5	
—		Temporary Entrance to Show . . . . .		65 11 11	
—		Extra Travelling Expenses . . . . .		36,403 9 6	
—		Bee Shed . . . . .		40 0 0	
18,123		Less Rent of 80 Flagpoles at 10s. . . . .		38,383 9 6	
49					
18,083					
		SURVEYOR :—			
45	{	Salary, 400l.; Assistant Surveyor's Salary, 130l.; Travelling		597 15 6	
—		Expenses to London, 29l. 8s.; Clerk, 10l. 10s.; Petty			
—		Cash, 7l. 17s. 6d. . . . .			
		PRINTING :—			
1,540	{	Printing of Prize Sheets, Entry Forms, Admission Orders,		1,457 10 3	
96		Circulars to Exhibitors, Prize Cards, Tickets and			
54		Miscellaneous . . . . .		106 5 0	
2,476		Programmes for Members . . . . .		69 0 0	
217		Plans of Showyard . . . . .		3,982 11 6	
87		Printing of Catalogues . . . . .		220 11 6	
48		Binding of Catalogues . . . . .		118 4 11	
59		Printing Awards . . . . .		85 0 0	
4,577		Programmes of Jumping Competitions . . . . .		26 0 0	
185				8,045 3 2	
298		ADVERTISING :—			
300		Advertising Closing of Entries in Newspapers . . . . .		278 8 6	
351		Advertising Show in Newspapers . . . . .		390 8 9	
33		Bill Posting . . . . .		304 1 3	
1,091		Printing of Posters, &c. . . . .		358 12 0	
152		Press Vist . . . . .		74 13 6	
57		Carriage . . . . .		5 6 10	
10				1,411 10 10	
219		POSTAGE, CARRIAGE, &c. :—			
2,728		General Postage . . . . .		187 10 2	
18,344		Postage of Badges to Members . . . . .		83 18 2	
106		Carriage of Luggage . . . . .		19 3 4	
115				290 11 8	
£36,109		AMOUNT OF PRIZES AWARDED, including 4,217l. 15s. 0d. given by various Societies and Darlington Local Committee		10,222 15 0	
1,834	{	COST OF FORAGE FOR LIVE STOCK :—			
1,472		Hay, 1,472l. 1s. 3d.; Straw, 908l. 7s. 8d.; Green Food, 862l.			
136		13s. 7d.; Cartage and Labour, 289l. 10s. 6d.; Carriage, 79l.			
8s. 1d.; Stewards' Exp. 30l. 11s. 7d.; Petty Cash, 22l. 18s. 0d.)				3,669 11 5	
945	{	JUDGES' FEES AND EXPENSES :—			
136		Judges of Miscellaneous Implements, 39l. 18s. 3d.; Horses,			
115		136l. 17s. 11d.; Cattle, 244l. 16s. 11d.; Sheep, 201l. 6s. 8d.;			
115		Pigs, 103l. 11s.; Goats, 8l. 18s. 9d.; Poultry, 29l. 2s. 0d.;			
115		Rabbits, 11l. 1s.; Produce, 58l. 19s. 1d.; Luncheons,			
115		104l. . . . .		938 11 7	
115		Badges for Judges and other Officials . . . . .		114 5 11	
115		Rosettes . . . . .		95 9 8	
£36,109		Carried forward . . . . .		£59,749 4 3	

## STATEMENT OF RECEIPTS AND EXPENDITURE

Corresponding figures for 1918.			Receipts (contd.).			
			£	s.	d.	£
22,483		Brought forward				28,759 7 4
ADMISSIONS TO SHOWYARD:—						
2,127		Tuesday, June 29, @ 5s.				2,836 18 9
6,651		Wednesday, June 30, @ 3s.				7,062 10 6
10,209		Thursday, July 1, @ 3s.				7,845 18 10
3,513		Friday, July 2, @ 2s.				3,456 12 0
3,206		Saturday, July 3, @ 2s.				2,651 12 2
993		Season Tickets				663 10 0
562		Day Tickets				777 12 0
27,261						25,894 13 3
ENTRANCES TO HORSE RING:—						
385		Wednesday, June 30				384 2 6
423		Thursday, July 1				375 0 0
269		Friday, July 2				303 8 0
162		Saturday, July 3				258 14 0
1,048		Tickets sold for Reserved Enclosure.				881 14 2
1,287						2,202 18 8
SALES:—						
197		Sales of Produce at Dairy				347 18 8
509		Auction Sales in Showyard (Share of Commission)				1,082 7 0
						59,387 4 11

—	Debit Balance	7,766 5 8
<u>£52,737</u>		<u>867,058 10 7</u>

Examined, audited, and found correct, this 25th day of November, 1920.

THOMAS MORROW, *Secretary.*DELOITTE, FLENDER, GRIFFITHS & CO., *Accountants.*JONAS M. WEBB.  
H. J. GREENWOOD.Auditors  
(each)  
the 25th

# OF THE SHOW AT DARLINGTON (continued).

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Correspond-  
ing figures  
for 1918.

## Expenditure (contd.).

		£	s.	d.	£	s.	d.
36,169	Brought forward . . . . .				59,748	4	3
	<b>GENERAL ADMINISTRATION:—</b>						
172	Stewards:—Personal and Railway Expenses . . . . .	272	18	6			
168	Assistant Stewards:—Personal and Railway Expenses . . . . .	237	2	8			
	Official Staff:—Extra Clerks, 278 <i>l.</i> 17 <i>s.</i> 10 <i>d.</i> ; Lodgings, 56 <i>l.</i> 8 <i>s.</i> 0 <i>d.</i> ; Maintenance of Clerks, 66 <i>l.</i> 2 <i>s.</i> 6 <i>d.</i> ; Travelling Expenses, 33 <i>l.</i> 8 <i>s.</i> 0 <i>d.</i> ; Secretary's Hotel and Travelling Expenses 123 <i>l.</i> 12 <i>s.</i> 6 <i>d.</i>	580	9	6			
451	Finances Office:—Finance Clerk, 9 <i>l.</i> 5 <i>s.</i> 6 <i>d.</i> ; Grand Stand Men, 89 <i>l.</i> 10 <i>s.</i> 7 <i>d.</i> ; Turnstile Men, 60 <i>l.</i> ; Bank Clerks, 51 <i>l.</i> 11 <i>s.</i> 6 <i>d.</i> ; Refreshments, 2 <i>l.</i> 2 <i>s.</i>	205	9	7			
180	Awards Office:—Clerks, 39 <i>l.</i> 14 <i>s.</i> 7 <i>d.</i> ; Awards Boys, 20 <i>l.</i> 5 <i>s.</i> 0 <i>d.</i>	59	19	7			
57					1,335	19	10
1,028	<b>General Management:—</b>						
132	Foreman and Assistant Foremen . . . . .	154	7	11			
72	Yardmen and Foddermen . . . . .	151	2	7			
133	Door and Gate Keepers . . . . .	259	9	3			
109	Veterinary Department:—Veterinary Inspectors . . . . .	166	19	5			
	Engineering Department:—Consulting Engineer and Assistant, 69 <i>l.</i> 6 <i>s.</i> 6 <i>d.</i> ; House, Maintenance, and Travel-ling Expenses, 46 <i>l.</i> 7 <i>s.</i> 9 <i>d.</i>	116	17	3			
80	Police, &c.:—Local Police, 456 <i>l.</i> 13 <i>s.</i> 2 <i>d.</i> ; Commissioners, 17 <i>l.</i> 2 <i>s.</i> 6 <i>d.</i>	473	15	8			
619							
					1,311	12	1
1,145	<b>Dairy:—</b> Staff, 379 <i>l.</i> 8 <i>s.</i> 8 <i>d.</i> ; Milk, 178 <i>l.</i> 0 <i>s.</i> 6 <i>d.</i> ; Ice, 33 <i>l.</i> ; Utensils, 179 <i>l.</i> 0 <i>s.</i> 3 <i>d.</i> ; Salt, 2 <i>l.</i> 4 <i>s.</i> ; Engine, 29 <i>l.</i> 6 <i>s.</i> 6 <i>d.</i> ; Butter Tests, 45 <i>l.</i> 7 <i>s.</i> 2 <i>d.</i> ; Shafting, 5 <i>l.</i> 1 <i>s.</i> 9 <i>d.</i> ; Lodgings, 13 <i>l.</i> 11 <i>s.</i> ; Butter and Cheese Boxes, 8 <i>l.</i> 14 <i>s.</i> 3 <i>d.</i> ; Milk Analysis, 47 <i>l.</i> 5 <i>s.</i> 10 <i>d.</i> ; Refreshments, 30 <i>l.</i> 10 <i>s.</i> 3 <i>d.</i> ; Labour, 22 <i>l.</i> 19 <i>s.</i> 6 <i>d.</i> ; Fuel, 4 <i>l.</i> 6 <i>s.</i> 4 <i>d.</i> ; Miscellaneous, 34 <i>l.</i> 2 <i>s.</i> 5 <i>d.</i> ; Purchase of Cheese, 3 <i>l.</i> 6 <i>s.</i> 0 <i>d.</i>	1,016	4	5			
561	Analysis of Cider . . . . .	19	5	2			
11	<b>Poultry:—</b> Superintendent, 19 <i>l.</i> 8 <i>s.</i> ; Penning and Feeding, 197 <i>l.</i> 8 <i>s.</i> ; Labour, 37 <i>l.</i> 9 <i>s.</i> 3 <i>d.</i> ; Carriage, 26 <i>l.</i> 2 <i>s.</i> ; Demon-strator, 16 <i>l.</i> 16 <i>s.</i> ; Refreshments, 2 <i>l.</i> 6 <i>s.</i> 8 <i>d.</i>	299	9	11			
168	<b>Rabbits:—</b> Superintendent, 10 <i>l.</i> 8 <i>s.</i> ; Carriage, 12 <i>l.</i> 7 <i>s.</i> 6 <i>d.</i>	22	15	6			
—					1,357	15	0
740	<b>Flower Show:—</b> Hire of Tents, 438 <i>l.</i> 1 <i>s.</i> 8 <i>d.</i> ; Judges, 27 <i>l.</i> 6 <i>s.</i> 0 <i>d.</i> ; Wages, 95 <i>l.</i> 10 <i>s.</i> 9 <i>d.</i> ; Medals, 35 <i>l.</i> ; Printing, 20 <i>l.</i> ; Advertising, 3 <i>l.</i> 18 <i>s.</i> ; Carriage, 8 <i>l.</i> 7 <i>s.</i>	628	3	5			
437	(For Admissions see Miscellaneous Receipts.)						
—	Plantation Competition . . . . .	98	16	2			
	<b>GENERAL SHOWYARD EXPENSES:—</b>						
282	Telephone Extension . . . . .	450	0	11			
240	Telegraph Extension . . . . .	257	0	0			
59	Hire of Chairs . . . . .	45	7	8			
57	Hire of Furniture . . . . .	318	10	0			
125	Official Luncheons . . . . .	71	12	8			
—	St. John Ambulance . . . . .	60	0	0			
64	Plans of Yard . . . . .	57	2	2			
40	Medals . . . . .	11	6	0			
29	Hire of Weighbridge . . . . .	39	4	8			
18	Billposting in Showyard . . . . .	13	16	0			
20	Engraving Cups . . . . .	22	1	10			
57	Education and Forestry . . . . .	114	8	4			
29	<b>Sleepers:—</b>						
11	Flags and Cord . . . . .	—					
11	Carriage . . . . .	16	13	6			
38	Hire of Bath Chairs . . . . .	—					
11	Gas and Fittings . . . . .	43	1	5			
9	Tan . . . . .	15	0	0			
—	Clerk of Works, Petty Cash . . . . .	19	0	3			
7	Hire of Scales and Typewriters . . . . .	18	12	0			
—	Horse and Carriage Hire . . . . .	12	0	0			
42	Miscellaneous . . . . .	86	16	6			
1,149					1,686	12	6
29	Outstanding Accounts from Cardiff Show . . . . .	910	7	4			
12,039	Credit Balance . . . . .	—					
52,737					£87,053	10	7
	Actual loss on the Darlington Show . . . . .	£7,766	5	8			
	Less:—Contribution from the Ordinary Account to Show Fund . . . . .	2,500	0	0			
		£5,266	5	8			

## STATEMENT OF ORDINARY INCOME

The Expenditure in this account includes not only cash payments.

Corresponds  
fig. figure  
for 1919.

## Income.

£		£ s. d.	£ s. d.
	ANNUAL SUBSCRIPTIONS:—		
1,270	Governors: Subscriptions for 1920 . . . . .	1,342 5 0	
62	Members: Received in 1919, but belonging to 1920 . . . . .	94 4 0	
8,287	Subscriptions for 1920 . . . . .	8,788 9 11	
115	Subscriptions for 1920 (additional) . . . . .	145 12 6	
183	Subscriptions for previous years . . . . .	57 1 0	
	LIFE GOVERNORS AND MEMBERS:—		
61	Annual Contributions . . . . .	60 2 0	
9,978			10,487 14 5
	MISCELLANEOUS:—		
249	Interest on Daily Balances . . . . .	286 13 2	
2,093	Income from Investments . . . . .	2,546 0 4	
175	Sales of Pamphlets, Farm Account Books and Diagrams . . . . .	124 12 6	
1,152	Sales of Text Book . . . . .	519 14 1	
333	Royalty on ditto . . . . .		
69	Sales of Library Catalogues . . . . .	8 15 6	
27	Miscellaneous . . . . .	34 5 7	
4,098			3,520 1 2
	TRIALS OF AGRICULTURAL TRACTORS:—		
	Entry Fees, Sales of Catalogues, Receipts at Garage . . . . .		1,550 17 8
	Rent of 13 Hanover Square . . . . .	231 0 0	
14,076	Less Rent paid . . . . .	231 0 0	
			15,558 13 8

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DEBIT BALANCE CARRIED TO BALANCE SHEET . . . . . 3,996 18 5

£14,099£18,555 11 8THOMAS MCROW, Secretary.  
DELOITTE, PLENDER, GRIFFITHS & CO., Accountants.

# AND EXPENDITURE FOR THE YEAR 1920.

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but all liabilities in connection with the year's transactions.

Corresponding figures for 1919.	£	s.	d.	£	s.	d.
	<b>Expenditure.</b>					
	<b>GENERAL ADMINISTRATION:—</b>					
2,025	Salaries of Official Staff (including clerical assistance)	2,416	4	2		
140	Pensions to Officials	140	0	0		
80	Legal Charges and Auditors' Fees	83	9	6		
1,022	Rent, Rates, Taxes, Insurance, and House Expenses	1,098	15	6		
13	Purchase of Books	20	11	1		
857	Printing and Stationery	1,160	3	11		
181	Postage and Telegrams	327	15	8		
80	Carriage of Parcels and Travelling Expenses	93	4	1		
83	Advertising and Miscellaneous Office Expenses	140	5	11		
					5,489	9 10
4,481	<b>JOURNAL OF THE SOCIETY, VOL. 81:—</b>					
848	Printing and Binding	1,182	17	3		
245	Postage, Packing, and Delivery	430	0	0		
250	Editing and Literary Contributions	270	0	0		
60	Illustrations	117	2	9		
		£ s. d.	2,000	0	0	
1,403	Less Sales (Vol. 80 and earlier)	76	17	5		
403	Advertisements (Vol. 81)	700	0	0		
			778	17	5	
1,000					1,223	2 7
231	Excess expenditure in production of Vol. 80				1,032	19 2
1,372	Printing Text Book				875	0 0
68	Printing Farm Account Books				158	8 5
—	Printing Pamphlets				61	15 6
	<b>LABORATORY:—</b>					
785	Salary and Petty Cash				723	1 6
	<b>OTHER SCIENTIFIC DEPARTMENTS:—</b>					
275	Botanist's Salary	250	0	0		
220	Zoologist's Salary	200	0	0		
53	Consulting Engineer	52	10	0		
400	Grant to Royal Veterinary College	400	0	0		
100	Grant to Research Institute, University College, Reading	100	0	0		
3	Medals for Proficiency in Cattle Pathology	4	4	0		
1,051					1,006	14 0
	<b>NATIONAL DIPLOMA IN AGRICULTURE:—</b>					
154	Honoraria and Expenses of Examiners	199	10	9		
55	Travelling Expenses of Officials	118	1	8		
38	Hotel Expenses of Examiners and Officials	74	1	4		
58	Printing, Stationery, and Postage	94	15	6		
7	Writing Diplomas	16	19	6		
74	Salaries for Assistants	75	0	0		
		578	8	9		
386	Less Entry Fees and Sales of Examination Papers	300	8	8		
76					278	0 1
310	Less Highland and Agricultural Society's Moiety	139	0	1		
155					139	0 0
	<b>NATIONAL DIPLOMA IN DAIRYING:—</b>					
21	Hire of Premises, &c.	17	12	7		
79	Fees to Examiners	63	15	7		
38	Hotel and Travelling Expenses	34	6	2		
21	Printing and Postage	46	4	6		
		161	18	10		
159	Less Entry Fees and Sales of Examination Papers	112	16	6		
65					49	2 4
94	<b>EXTRA EXPENDITURE:—</b>					
38	Library—Binding of Books, &c.	49	17	6		
135	Hills' Bequest—Contribution for current year	238	11	0		
193	Emergency Committee	188	19	2		
1,450	Contribution towards Woburn Farm	150	0	0		
10	Subscription to Conjoint Board of Scientific Societies	10	0	0		
181	Occasional Notes to Members	206	3	1		
175	Honorarium to Staff	—				
180	Painting Society's House	—				
					843	10 9
2,362	AMOUNT SET ASIDE TOWARDS LOSS ON SHOWS				2,500	0 0
2,500	<b>TRIAL OF AGRICULTURAL TRACTORS:—</b>					
—	Cost of Trials (for details see separate statement)				4,854	12 7
£14,099					£19,555	11 8

Examined, audited, and found correct, this 24th day of February, 1921.

JONAS M. WEBB.  
H. J. GREENWOOD. } Auditors on behalf of the Society.  
NEWELL P. SQUAREY.



## ROYAL AGRICULTURAL

Dr.

## BALANCE SHEET.

Corresponding figures for 1919.		£ s. d.	£ s. d.	£ s. d.
	To SUNDEY CREDITORS—			
4,608	Sundry Creditors . . . . .		5,850	16 0
94	Subscriptions received in 1920 in advance . . . . .		176	14 0
1,981	Show receipts received in 1920 but belonging to 1921 less expenses . . . . .		1,870	13 6
6,683	To OVERDRAFT at Bank . . . . .			7,896 2
				1,253 1
	To CAPITAL—			
61,048	As at December 31, 1919 . . . . .		73,275	8 5
	Deduct			
	SHOW FUND—			
12,039	Profit Loss on Show at Darlington . . . . .	7,766	5 8	
2,500	Less amount set aside from ordinary account . . . . .	2,500	0 0	5,266 5 8
	Add		68,009	2 9
1,612	Life Compositions received in 1920 . . . . .		2,189	0 0
50	Donation towards the Society's Funds . . . . .		115	13 0
77,249			70,263	15 9
43	Less Debit balance on ordinary income and expenditure account . . . . .		3,996	18 5
81	Sundry debts unrecoverable . . . . .			
77,145			66,266	17 4
	DEPRECIATIONS written off, viz.:—			
1,849	War Stock 5 per cent. (1929-1947) . . . . .	5,538	17 11	
682	Metropolitan 3 per cent. (1941) . . . . .		56	16 3
1,110	Canadian 4 per cent. (1940-1960) . . . . .		489	12 2
18	Fixtures . . . . .		16	11 2
62	Furniture . . . . .		59	6 7
3	Machinery . . . . .		8	2 8
96	Show Plant . . . . .		86	0 10
50	Buildings at Woburn . . . . .	22	19 2	6,273 6 9
1,870				59,969 11
73,275				
£79,958				£ 269,149 11

THOMAS MCROW, *Secretary.*DELOITTE, FLENDER, GRIFFITHS & CO., *Accountants.*

# SOCIETY OF ENGLAND.

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DECEMBER 31, 1920.

Cr.

respond- ing figures of 1919.		£ s. d.	£ s. d.
	By RESERVE FUND—		
	65,163 <i>l.</i> 9 <i>s.</i> 1 <i>d.</i> 5 per cent. War Stock (1920-1947) @ 83½*		54,167 2 5
59,706	500 <i>l.</i> War Saving Certificates @ cost . . . . .		287 10 0
387	2,840 <i>l.</i> 18 <i>s.</i> 6 <i>d.</i> Metropolitan 3 per cent. Consol- dated Stock (1941) @ 62* . . . . .		1,761 4 4
1,818	6,528 <i>l.</i> 1 <i>s.</i> 6 <i>d.</i> Canadian 4 per cent. Stock (1940-1960) @ 72* . . . . .		4,700 4 3
5,196	* Written down to market value at 31 Dec., 1920.		
	By LEASE OF 16 BEDFORD SQUARE . . . . .	1,700 0 0	
1,700	Less Amount written off . . . . .	100 0 0	1,600 0 0
	By FIXTURES—		
	Value at December 31, 1919 . . . . .	220 16 1	
	Less Depreciation at 7½ per cent. . . . .	16 11 2	204 4 11
211	By FURNITURE—		
	Value at December 31, 1919 . . . . .	593 5 10	
593	Less Depreciation at 10 per cent. . . . .	59 6 7	533 19 3
1,571	By PICTURES (500 <i>l.</i> ) and BOOKS (1,071 <i>l.</i> 4 <i>s.</i> 10 <i>d.</i> ) . . . . .		1,571 4 10
	By MACHINERY—		
	Value at December 31, 1919 . . . . .	31 7 0	
	Less Depreciation at 10 per cent. . . . .	3 2 8	
		28 4 4	
31	Added during 1920 . . . . .	65 16 10	94 1 2
	By SHOW PLANT—		
	Value at December 31, 1919 . . . . .	860 8 5	
860	Less Depreciation at 10 per cent. . . . .	56 0 10	774 7 7
	By BUILDINGS FOR POT EXPERIMENTS AT WOBURN—		
	Additions and improvements during 1920 . . . . .	91 16 8	
	Less Depreciation at 25 per cent. . . . .	22 19 2	58 17 6
2,011	By SUNDRY DEBTORS . . . . .		2,952 10 3
	By CASH AT BANKERS AND IN HAND—		
	Reserve Fund . . . . .	323 0 0	
5,870	In Hand . . . . .	11 9 6	334 9 6
579,958			589,149 16 0

Examined, audited, and found correct, this 24th day of February, 1921.

JONAS M. WEBB.  
H. J. GREENWOOD. } Auditors on behalf of the Society.  
NEWELL F. SQUAREY. }

# TRIALS OF AGRICULTURAL TRACTORS.

## STATEMENT OF RECEIPTS AND EXPENDITURE, DECEMBER 31st, 1920.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
By Entry Fees . . . . .	1,020	0 0	To Judges . . . . .	824	16 3
" Sales of Catalogues . . . . .	117	1 2	" Observers . . . . .	380	0 3
" Receipts at Garage . . . . .	30	8 10	" Engineers . . . . .	286	16 3
" Advertisements . . . . .	333	7 8	" Labour and Horse Hire . . . . .	508	2 3
			" Board and Lodgings for Judges and Officials . . . . .	470	16 3
			" Printing . . . . .	446	17 6
			" Postage . . . . .	167	13 10
			" Official Luncheons and Teas . . . . .	269	12 0
			" Fuel . . . . .	178	17 7
			" Bus and Motor Hire . . . . .	75	19 0
			" Advertising . . . . .	90	16 10
			" Stewards' Expenses . . . . .	180	0 0
			" Prizes . . . . .	103	1 0
			" Medical . . . . .	103	3 0
			" Hire of Aerodrome . . . . .	56	6 6
			" Hire of Tents . . . . .	47	6 9
			" Haulage . . . . .	15	6 3
			" Insurance . . . . .	19	16 7
			" Telephone . . . . .	14	4 8
			" Hire of Weighing Machines . . . . .	2	1 0
			" Hire of Machinery . . . . .	2	3 6
			" Ironmongery . . . . .	19	13 10
			" Secretary and Staff, Travelling Expenses . . . . .	9	11 9
			" Carriage and Miscellaneous . . . . .		
To Balance . . . . .	1,560	17 8			
	3,303	14 11			
	<u>£4,864</u>	<u>12 7</u>		<u>£4,864</u>	<u>12 7</u>

Examined, audited, and found correct, this 24th day of February, 1921.

THOMAS MCROW, *Secretary*.  
DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants*.

JONAS M. WEBB,  
JOHN GREENWOOD,  
NEWELL F. SQUAREY, } *Auditors on behalf of the Society.*

STATEMENT OF FUNDS HELD BY THE SOCIETY IN TRUST OR WHICH ARE NOT  
CONSIDERED AVAILABLE FOR GENERAL PURPOSES, DECEMBER 31, 1920.

To Hills' Request for Pot-culture Experiments	£	s.	d.	£	s.	d.
Less : Depreciation of Consoles at time of conversion		9,000	0	0		
" Cost of conversion		3,682	7	11		
		134	14	7	3,717	2
					6	
					<u>5,282</u>	<u>17</u>
					6	
To Fund provided by the late Sir Walter Gilbey for Endowment of Lectureship at Cambridge when after a certain date any balance on this account will become the property of the Society						
					1,189	19
					10	
					<u>1,189</u>	<u>19</u>
					10	
To Superannuation and Insurance Fund :—						
Amount set aside in accordance with Provision of Trust of 20, 1911	£	s.	d.	£	s.	d.
Less : Depreciation of Consoles at time of conversion		9,171	5	0		
" Cost of conversion		1,837	18	4		
		256	3	0	2,094	1
					4	
Income Tax payable on War Stock Interest					7,077	3
Accumulations to December 31, 1920					223	0
					8	
					<u>750</u>	<u>10</u>
					5	
					<u>£8,057</u>	<u>3</u>
					9	
By 5,660 <i>l.</i> 17 <i>s.</i> 8 <i>d.</i> War Stock (1929-1947) received under the conversion rights for 5,282 <i>l.</i> 17 <i>s.</i> 6 <i>d.</i> 41% War Stock						
(Value on December 31, 1920, at 83½ = 4,622 <i>l.</i> 9 <i>s.</i> 8 <i>d.</i> )					5,282	17
					6	
By 1,140 <i>l.</i> Metropolitan Water A Stock at cost (Value on December 31, 1920, at 50½ = 576 <i>l.</i> 14 <i>s.</i> 0 <i>d.</i> )						
By amount included in the Society's Sundry Creditors' Account :—	£	s.	d.	£	s.	d.
Fund uninvested					19	0
Accumulated income					189	19
					10	
					<u>191</u>	<u>18</u>
					10	
					<u>£1,189</u>	<u>19</u>
					10	
By Investments in names of Trustees of Superannuation and Insurance Funds, viz. :—						
7,144 <i>l.</i> 12 <i>s.</i> 4 <i>d.</i> at Stock (1929-1947) received 41% the conversion rights for 7,077 <i>l.</i> 3 <i>s.</i> 8 <i>d.</i>					7,077	3
(Value on December 31, 1920, at 83½ = 6,192 <i>l.</i> 9 <i>s.</i> 10 <i>d.</i> )					8	
443 <i>l.</i> 3 <i>s.</i> 11 <i>d.</i> West Australian 3½% Stock (1935-1955) at cost					369	17
(Value on December 31, 1920, at 62 = 274 <i>l.</i> 15 <i>s.</i> 7 <i>d.</i> )					4	
235 <i>l.</i> 18 <i>s.</i> 6 <i>d.</i> Queensland 3½% Stock (1950-1970) at cost					185	10
(Value on December 31, 1920, at 55 = 129 <i>l.</i> 15 <i>s.</i> 2 <i>d.</i> )					4	
Cash at Bank					434	12
					6	
					<u>£8,057</u>	<u>3</u>
					9	

Examined, audited, and found correct, this 24th day of February, 1921.  
THOMAS McRORY, Secretary.  
LOXAS M. WEBB, Auditors on behalf of  
DELOITTE, FLENDER, GRIFFITHS & CO., Accountants.  
H. GREENWOOD,  
NEWELL, F. SQUAIREY, the Society.

(Copies of the full Report of any of the Council Meetings held during the year 1920 may be obtained on application to the Secretary, at 18 Bedford Square, London, W.C.1.)

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

### Minutes of the Council.

WEDNESDAY, FEBRUARY 4, 1920.

Sir J. B. BOWEN-JONES, Bart. (Trustee), in the Chair.

In the unavoidable absence of the President, H.R.H. the Prince of Wales, Sir J. B. Bowen-Jones, Bart., was called to the Chair, on the motion of Sir John Thorold, seconded by Mr. Adeane.

Before proceeding with the business of the meeting, the CHAIRMAN announced that His Royal Highness had expressed his regret that he was unable to be present.

Mr. W. H. Bradwell, Thurland Street, Nottingham, Mr. William Carr, "Rosehill," Dodworth, near Barnsley, and Capt. Arthur G. Soames, O.B.E., Ashwell Manor, Penn, High Wycombe, were elected as Governors, and 158 duly nominated candidates were admitted into the Society as Members.

On presentation of the Report of the CHEMICAL AND WORKING Committee, Mr. MIDDLETON said he thought it was most important that, as suggested by the Committee, combined action should be taken to secure the amendment of the Fertilisers and Feeding Stuffs Act. The most important matter calling for amendment was, he thought, the removal of the power of veto by the Board of Agriculture in cases of prosecution by County Councils. The Act was so loosely drawn that it was almost impossible to secure a conviction, and he thought that was the reason why the Board so frequently withheld their permission for proceedings to be taken. He entirely disagreed with that view. Even if a prosecution were unsuccessful, the attention called to a case did almost as much good as if the prosecution had succeeded.

The EARL OF NORTHBROOK presented the Report of the VETERINARY Committee, which was adopted; and moved

"That the Council of the Royal Agricultural Society of England views with the greatest alarm the continued outbreaks of foot-and-mouth disease, and strongly urges upon the Ministry of Agriculture the absolute necessity for the most stringent measures being taken to combat this disease and to prevent its reintroduction. They further ask the Ministry to inform the Society what steps are being taken to deal with this matter."

The Committee, his Lordship said, had given very careful consideration to the serious position arising through the continued prevalence of foot-and-mouth disease in the country, and they were of opinion that the time had arrived when it was desirable that the Council should strongly urge on the Ministry of Agriculture the necessity of taking the most stringent measures to combat the disease. The Committee were also of the opinion that, in view of the serious increase of the number of outbreaks, their wide distribution throughout the country, and the failure of the Ministry to discover how and whence the infection was introduced, the Council were entitled to ask for precise information as to what steps were now being taken by the Ministry in the matter. It was on these grounds that the Committee recommended the Council to pass the resolution. He would like to point out that that resolution did not imply that the Ministry had failed to deal effectively with the outbreaks, nor was it intended to

suggest that the Ministry were not doing all they could to deal with them. The Committee felt, however, that they were in the dark, and thought that the Society was entitled to receive that information. They might then be in a position to make some suggestions to assist the Ministry in dealing with what every one would agree was a very difficult problem.

The motion was seconded by Mr. ALFRED MANSELL, and after some remarks by Mr. Wm. GRAHAM and Mr. DAVIS BROWN, was unanimously adopted.

LORD NORTHBROOK asked permission to move another resolution, which did not emanate from the VETERINARY Committee, but was closely connected with the resolution just passed. The resolution was as follows :—

"That in view of the recommendation contained in the final report of the Committee on the Production and Distribution of Milk, recently presented to Parliament, that facilities should be given for the importation of Friesians, the Royal Agricultural Society of England strongly protests against the importation into this country from abroad of any live cattle except for slaughter at port of landing."

He understood that the recommendations of the Departmental Committee on the Production and Distribution of Milk were now receiving the consideration of the Government, and he thought the Council should take the earliest possible opportunity of protesting against the adoption of this particular recommendation of the report as to the importation of cattle from a country in which foot-and-mouth disease at the present time was very largely prevalent.

His Lordship recalled the circumstances in connection with the importation of a number of cattle from Holland in 1914, and stated that it was open to question whether the then President of the Board had not exceeded his powers under Sec. 1 of the Diseases of Animals Act, 1898, when he gave permission for the importation of so large a number of animals.

Mr. MIDDLETON seconded the motion, in support of which Mr. ADEANE, Mr. MANSELL, Mr. Wm. GRAHAM and Mr. PILKINGTON also spoke; and it was carried unanimously.

A Report from the WAR EMERGENCY Committee was presented and adopted after a discussion as to the Society's representation on the Agricultural Wages Board, in which Mr. ADEANE, Mr. OVERMAN, Sir AILWYN FELLOWES, Mr. DAVIS BROWN, Mr. JOHN EVENS, Mr. MIDDLETON, and Mr. PATTERSON took part. The Committee in future will be known as the "Emergency Committee."

## WEDNESDAY, MARCH 3, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair.

Sir JOHN THOROLD said that in consequence of the absence of the Prince of Wales from England, the Selection Committee had asked His Royal Highness to appoint a deputy while he was away. He was very happy to say that the Prince of Wales had selected the Marquis of Londonderry to serve as Acting-President during his absence. He felt sure that, having known his Lordship's father, and bearing in mind that the Show was to be at Darlington, they would all welcome him in the chair that day. (Applause.)

The MARQUIS OF LONDONDERRY, in thanking Sir John Thorold for his kind remarks, expressed the great disappointment they all felt that the Prince of Wales found himself unable to preside at the Royal Agricultural Society's Show this year. He felt very deeply the honour of being selected as the deputy of His Royal Highness. He assured the Council that he would do his utmost to carry out the duties of Acting-President, and in

doing so he felt that he might rely upon receiving the hearty co-operation of all those he saw around him that day.

Sir J. B. BOWEN-JONES said it was with deep regret that he had to announce officially the death of Lord Moreton, one of their trustees, who had been an active member of the Council for the past forty years. As they were all aware, Lord Moreton had served on many of their committees, and, in fact, had at different times filled almost every office in connection with the Society's work. For a considerable period he had been Chairman of the Education Committee, and on the constitution of the National Agricultural Examination Board he became its first chairman. He had also been one of the Society's representatives on the Oxford and Reading Joint Committee, and in many other ways had been closely associated with the cause of agricultural education in this country. Lord Moreton's association with the work of the Shorthorn Society was well known to them all. It would doubtless be their wish that an expression of the Society's sympathy and condolence with Lady Moreton should be forwarded by the Acting-President, together with the following resolution :—

"That the Council greatly regret the loss they have sustained by the death of Lord Moreton, who had been a member of the Council for forty years, and whose able assistance for so many years and on so many occasions had been of the greatest benefit to the Society and to the cause of agriculture generally."

Those present signified their assent by rising in their places.

Sir BOWEN, continuing, said the Council would all be grieved to learn, too, of the death of Mr. Robert W. Hobbs, who had represented Oxfordshire on the Council for sixteen years, and who, in consequence of failing health, had resigned his seat in May last.

The Chairman was asked to convey an expression of the sincere sympathy of the Council to Mrs. Hobbs in the bereavement she and the family had sustained.

Mr. ROBERT HOBBS, jun., on behalf of Mrs. Hobbs and the family, acknowledged the generous tribute to his late father, and thanked the Council for their vote of condolence. He could assure them that amongst all the honours his father had had conferred upon him, there was none he valued more than his election to that Council, and there was no Society in which he took a closer interest.

Mr. G. R. Bennett, Old House, West Hoathly, Sussex; Mr. Richard Cornelius, Lutwyche Hall, Much Wenlock, Salop; and Capt. Philip Eustace-Smith, M.C., Whalton, Morpeth, were elected as Governors, and 69 duly nominated candidates were admitted into the Society as Members.

Mr. ADEANE reported that the EMERGENCY Committee had met the previous day and had passed the following resolution :—

"That this committee has learnt with astonishment of the decision of the Government purporting to encourage the growing of wheat, and is convinced that a continuation of present conditions will lead to a great diminution in the food supply of the nation, and that nothing less than the increase of price indicated in Lord Lee's recent statement to the Press for the 1920 crop of wheat will arrest the decline in the cultivation of that cereal."

Mr. ADEANE said that Lord Lee had made an interesting statement to the Press with reference to the Government's proposals for the 1921 crop of wheat. The Minister of Agriculture spoke of the serious shrinkage in the area under wheat of 400,000 acres, up to June last, and pointed out that this would necessitate a very much larger importation of wheat, the average prices of which were over 114s. per quarter. Lord Lee went on to say :—

"At the same time, the reason for this decline of home production is not far to seek. Alone of all the cereal crops, home-grown wheat is still controlled, is denied a free market, and can be sold only to the Government at a maximum price of 76s. per quarter. This price was fixed in 1918, at a time when the costs of production, and notably wages, were far lower than they are to-day. Taking these changes into consideration, it has been ascertained that the equivalent of 76s. in 1918 is not less than 95s. in 1920. Con-

sequently, whatever the inducement to grow wheat may have been in 1918—and it has proved insufficient—it is nearly £1 a quarter less to-day. Almost any other crop gives the farmer a better return, and in these circumstances it is not surprising that wheat-growing has fallen into disfa-vour. In fact, the controlled price has acted as a direct and effective deterrent to home wheat production, and in this respect is operating to the detriment of both the consumer and the taxpayer."

That, continued Mr. ADEANE, was the statement of the Minister of Agriculture; therefore the Committee were astonished to see the decision of the Government making no increase in the price for the 1920 crop. When the maximum price was fixed in 1918 farmers understood that it was based upon the cost of production plus a fair profit. That was the formula supposed to be adopted by the Food Controller whenever he fixed prices, as laid down by Lord Rhondda in his speech, reported in *The Times* of January 19, 1918, and was accepted by farmers.

Since 1918 the cost of production had gone up, and it was manifestly unfair to keep wheat at the same price at which it stood in 1918. Indeed, they were clearly told by the Minister of Agriculture that the corresponding price, based on the cost of production, was 95s. a quarter. They were entitled, he thought, to ask that, so long as there was control, the formula—the cost of production plus a fair profit—should be adhered to in calculating prices. (Hear, hear.) Judged by that formula, and by the statement of the Minister of Agriculture, the price of wheat fixed for 1920, which was 76s. a quarter, was not sufficient to cover the cost of production. Farmers quite understood the difficulties of the Government, but, at the same time, they could not be expected to produce wheat at below the cost of production; it was not business. (Hear, hear.)

He moved the adoption of the Report of the Committee.

Mr. OVERMAN said he had never known the farmers of England so angry as they were at the result of the Government's announcement as to the future prices of wheat. At the meeting of the Emergency Committee it was suggested that Mr. Tindall and himself should take the resolution which had been read by Mr. Adeane and present it personally to Lord Lee. They did so, but made it clear that they did not constitute a deputation from the Society.

As Mr. Adeane had said, farmers were promised the cost of production plus a fair profit, but every one knew that the fair profit had not been forthcoming. But there were few farmers who would complain about the price of 76s. if they were allowed to use their wheat for feeding stock. They actually received 76s. a quarter for their milling wheat, but they had to pay up to £24 or £25 a ton for feeding stuffs. It was quite possible that there would be many acres of wheat crossed this year with oats and barley, so as to turn the wheat into dredge corn, which would not be for the benefit of the community.

In Government circles it was thought that next October the amount of foreign wheat would be very small. When that time came they would have to encourage the farmer to thresh it for them. It was incumbent upon all agricultural organisations to urge upon the Government the fact that there must be a larger price fixed for the 1920 crop.

Mr. TINDALL said the really important matter was to get the Government to adhere to the principle of the cost of production and a fair profit. The Government were aware that very serious rises in the cost of production had occurred since the 1918 wheat price was fixed, and the price ought to have been increased accordingly.

The Report of the Committee was carried unanimously.

LORD LONDONDERRY, *owing to another engagement, having to leave the meeting, the Chair was taken by Sir J. B. BOWEN-JONES.*

The Report of the VETERINARY Committee was presented, including a recommendation:



"That the Minister of Agriculture be requested to receive a deputation from the Society to discuss the present position with regard to foot-and-mouth disease in this country, with particular reference to the means of its introduction."

After remarks by the EARL OF NORTHBROOK, MR. MIDDLETON, MR. MANSELL and Lord STRACHIE, the Report of the Committee was adopted.

### WEDNESDAY, MARCH 31, 1920.

The Hon. CECIL T. PARKER (Trustee) in the Chair.

In the absence of the Acting-President (the Marquis of Londonderry), the Hon. Cecil T. Parker was called to the Chair on the motion of the EARL OF COVENTRY, seconded by Sir JOHN THOBOLD.

Mr. John Q. Rowett, of Ely Place, Frant, Tunbridge Wells, was elected as a Governor, and 80 duly nominated candidates were admitted into the Society as Members.

Mr. G. G. REA introduced a deputation from Newcastle-upon-Tyne, who extended an invitation to the Society to hold the Show in that City in 1923. The deputation consisted of: Councillor J. Barker (Deputy Lord Mayor), Councillor R. Mayne (Sheriff of Newcastle), Alderman J. J. Gillespie, Councillor James Cooper, Mr. J. D. Walker (Chairman, Stewards Committee of the Freeman), Mr. A. M. Oliver (Town Clerk) and Earl Grey (representing the Northumberland Agricultural Society).

The DEPUTY LORD MAYOR, EARL GREY and Mr. J. D. WALKER having spoken in support of the invitation, it was unanimously resolved, on the motion of the CHAIRMAN, seconded by the DUKE OF DEVONSHIRE:—

"That the invitation accorded by the deputation from Newcastle-upon-Tyne, to hold the Show in that city in 1923, be accepted, and that the usual agreement with the Corporation be entered into in due course."

On the motion of Mr. MANSELL, seconded by Mr. MIDDLETON, it was resolved:—

"That the Royal Agricultural Society of England appoint a small deputation to associate themselves with the Central Chamber of Agriculture to wait on Lord Lee with reference to the importation of live stock, and to protest against the importation of Friesian cattle."

Mr. WILLIAM GRAHAM (Governor) drew attention to the slaughter of calves which, he said, was taking place very freely. It was most detrimental to the future supply of dairy cattle, and also to the stock-raising interests of the country. He thought the Society should take some effective means to secure that some check should be placed on the killing of immature animals, otherwise it might eventually give occasion to the Board of Agriculture to introduce Canadian stores. He moved "That this Council draws the attention of the Ministry of Agriculture to the wasteful and indiscriminate slaughter of calves, particularly heifer calves and young stock of the country, which is now taking place, as it must in the near future decrease the breeding stocks and milk supply of Great Britain."

Mr. G. G. REA seconded the motion, and said he fully agreed with Mr. Graham. It was not only the dairy industry, but also the large feeding areas of the country that were really going to feel the hardship. At the present time it was impossible to get store stock, and this was entirely due to the wholesale slaughter of calves during the last year or so. Not only was the supply of beef threatened for the future, but there would be no cattle to break down the straw and make manure.

Mr. ADEANE said they all had great sympathy with Mr. Graham's remarks with regard to the slaughter of calves, but he thought they should be cautious in this matter. Considering present high prices, it was foolish to kill calves. Surely they might leave it to the farmer to look after his own interests. The Council had approached the Government asking that

control should be taken off agriculture as soon as possible. Now they were being invited to ask the Government to put on control again. There was no stability at all in the country; one day they were asking for control, and another day they were asking for control to be taken off. He did hope that the Council would consider very carefully how they proceeded in this matter. He trusted Mr. Graham would see his way to withdraw the resolution. Mr. COMBES opposed the motion. It was a question of the feeder as against the breeder, and he hoped the Council would not take action as suggested. Mr. EVENS supported the remarks made by Mr. Adeane. He believed that the law of supply and demand would provide a remedy for the present state of affairs, which he looked upon as temporary. Mr. FITZHERBERT-BROCKHOLES also spoke against the resolution. It was a matter, he said, for the farmer to put his house in order.

At the request of the Chairman, Mr. Graham subsequently agreed to withdraw his motion.

The SECRETARY reported that letters had been received from Lady Moreton and Mrs. Hobbs, acknowledging the votes of condolence passed by the Council at their last meeting.

### WEDNESDAY, MAY 5, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair,

Mr. Robert D. Holt, High Bortans, Windermere, Mr. Hans Christian Nielsen, Mill Lane, Norton, Stockton-on-Tees, and Mr. J. Egerton Quesed, The Firs, Cheriton, Kent, were elected as Governors, and 89 duly nominated candidates were admitted into the Society as Members.

The EARL OF NORTHBROOK, in moving the adoption of the VETERINARY Committee's Report, said he regretted that he personally had been unable to accompany the deputation to Lord Lee on the question of the importation of foreign cattle. As the matter was of very great importance, it was proposed that the proceedings at the Conference with Lord Lee should be printed and circulated to members of Council, with the report of the meeting that day. Perhaps he might very briefly give a résumé of the principal points in Lord Lee's reply to what Lord Crewe and other members of the deputation had put before him. Lord Lee had said "that he was aware that the permission which had been given last summer for the importation from Canada of a certain number, not exceeding 100, of Friesian cattle, had caused considerable uneasiness—due, very largely, to a misunderstanding of what was proposed. In the first instance, he thought it very improbable, under the very stringent conditions imposed by the Ministry, that anything like the number of cattle for which permission had been given would be procurable, at any rate, not within a considerable period of time." He had also stated "that the permission to import, which was given officially by Lord Ernle last year, could not, in fairness, be withdrawn, and indeed, under the conditions imposed, withdrawal was quite unnecessary." He then went on to say that "the decision of the Ministry to allow the importation of these animals was not only within the letter, but also within the spirit of the Act, on the ground that the circumstances were exceptional and that the animals were of a 'rare and special kind,' to quote Lord Crewe's expression, and that it would be beneficial to the Holstein herd of the country if such animals could be introduced."

With all respect, he (Lord Northbrook) would like to express the strongest disagreement with the interpretation placed upon that particular section of the Act of 1896. (Hear, hear.) "The view given by Lord Lee, he had no hesitation in saying, was not the view held by any Minister of

Agriculture until Mr. Runciman created the unfortunate precedent by giving permission for introducing a considerable number of Friesian cattle into this country some five years ago. This was a most unsatisfactory matter. It meant that a Minister of Agriculture had the power, at his own discretion, of giving permission for any number of foreign animals to be brought into this country without giving any previous intimation of his intention, or any opportunity for the stockbreeders of the country to express their views. He felt that that position was fraught with considerable danger to stockbreeders.

Then Lord Lee had pointed out that there was little risk of disease being introduced, as the conditions of quarantine, &c., were very strict, and all these cattle would have to be certified as free from tuberculosis by the Canadian Government before they were brought over here. In conclusion Lord Lee had stated "that no one could contemplate the importation of store cattle into this country under such stringent conditions of quarantine, &c., and in any event the requisite 'exceptional circumstances' could not be urged in the case of store cattle. As already stated, the Government had no intention of admitting store cattle from anywhere, and in no case could such importation take place without fresh legislation."

Mr. CHRISTOPHER MIDDLETON supported what had been said by Lord Northbrook, as he considered Lord Lee's reply eminently unsatisfactory. There was a very strong feeling throughout the country that the Act of 1896 should be amended by the deletion of that clause which gave power to a Minister of Agriculture to import cattle for special purposes. A Bill was now being drafted with this object, under which it would be impossible for such animals to be imported except by an Order in Council, which would have to lie on the table of both Houses of Parliament for a specified period. He thought it might be held that, in view of the Society's Charter, the Council could not co-operate in the promotion of this Bill, but he would urge individual members to ask Members of Parliament, when that Bill was brought forward, to give it their hearty support.

Mr. GREAVES said the Council were aware that they had elected certain members of the Society of Motor Manufacturers and Traders on the Implementation Committee, for the purposes of the tractor trials. He might say that the knowledge and experience of those members had been most helpful, and the Committee were very grateful for the assistance given. As manufacturers, they were greatly interested in the facilities to be given to the public for witnessing these trials. One suggestion that had been made was that it might be possible to hold demonstrations after the trials with the view of facilities being given to the public for seeing the working of the machines. That, he thought, was a possible solution, but, as time was getting short, and these things would have to be settled soon, he suggested that the Committee should have power to make all arrangements necessary for these trials and demonstrations.

On the motion of Sir JOHN THOROLD, seconded by Mr. ADEANE, the honorary membership of the Society was conferred on M. Léon Boereboom, the Director of Agricultural Reconstruction in Western Flanders, whose co-operation with the Agricultural Relief of Allies Committee in the distribution of live stock to farmers in the devastated areas of Belgium had been of the greatest assistance to the Committee in carrying out their operations in that country. Sir JOHN THOROLD said that the President of that Fund, the Duke of Portland, was paying a visit to Belgium, and on Saturday next would attend an exhibition at Ypres of the live stock presented by the Committee to Belgium. His Grace had kindly consented to present the diploma to M. Boereboom at the public function to be held in honour of the Duke on that occasion. He was sure that all would sincerely hope that the action of the Society's Agricultural Relief of Allies Committee would be a lasting memento of the sympathy shown by the agriculturists of this country to their brave allies of Belgium.

On a motion from the Chair, the Seal of the Society was ordered to be affixed to the Diploma of Honorary Membership to be presented to M. Boereboom.

### WEDNESDAY, JUNE 2, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair.

Mr. John Anderson, 199 Piccadilly, W. 1, Mr. A.E. Dean, Pennoyle, Edenbridge, Kent, Lieut.-Comdr. R.F. Eyre, R.N., Lindley Hall, Nuneaton, Mr. George Holt-Thomas, North Dean House, Hughenden, Bucks, The Earl of Londesborough, Blankney, Lincoln, the Marquis of Londonderry, K.G., Londonderry House, Park Lane, W.1, Mr. James McLaren, Junr., Offerton Hall, Sunderland, Mr. John Nelless, Kyo Hall Farm, Greenside, Ryton-on-Tyne, Lieut.-Colonel F. R. Simpson, Hedgefield House, Blaydon-on-Tyne, Mr. John Slater, The Elms, Cheadle, and Miss Zula M. Woodhall, Norton Park, Bredons Norton, near Tewkesbury, were elected as Governors of the Society, and 244 duly nominated candidates were admitted into the Society as Members.

The Report of the FINANCE Committee was received and adopted; and, on the motion of Mr. ADEANE, it was resolved:

"That the Secretary be empowered to issue to any duly nominated candidate for membership of the Society, on receipt of the annual subscription, a badge admitting the candidate to the same privileges as a member during the forthcoming show at Darlington, the formal election of such candidate to be considered by the Council at their next ordinary meeting."

The DUKE OF PORTLAND, as President of the AGRICULTURAL RELIEF OF ALLIES Committee, made a report to the Council with regard to his visit to Belgium last month on the occasion of the Exhibition in the market place at Ypres of live stock given by the Committee for the assistance of farmers who had lost their possessions in the region of Belgium that had been devastated during the war.

The SECRETARY reported that he had just received the following resolution from the National Cattle Breeders' Association:—

"That the National Cattle Breeders' Association urges the Minister of Agriculture to approach all countries importing stud stock, and to inform them fully of the preventive measures taken to eradicate and prevent the spread of every outbreak of infectious or contagious disease in this country, and further to suggest that in their own interest every possible safeguard would be amply secured if they refused to accept for, say, 3½ months from the date of the eradication of the disease, any animal from within the area included in the infected zone as fixed by the Board on the notification of the outbreak of the disease."

After a discussion, in which Mr. ALFRED MANSELL, Mr. DAVIS BROWN, Col. STANYFORTH, LORD STRACHIE and Mr. HOWARD TAYLOR took part, the further consideration of the matter was postponed.

The SECRETARY reported that the Trustees of the Queen Victoria Gifts Fund had decided to make a grant of £140 to the Royal Agricultural Benevolent Institution for the year 1920, to be distributed as follows:—Three grants of £10 each to male candidates, three grants of £10 each to married couples, and eight grants of £10 each to female candidates.

### WEDNESDAY, JUNE 30, 1920.

HELD IN THE DARLINGTON SHOWYARD.

Sir J. B. BOWEN-JONES, Bart. (Trustee), in the Chair.

Mr. LUDDINGTON, as Chairman of the CHEMICAL AND WOBURN Committee, mentioned that the annual visit of the Council to the Woburn

Experimental Farm and Pot Culture Station would take place on July 28, after the Council meeting, which would be held at 10 a.m. on that day. Dr. Voelcker would be glad to receive the names of those intending to be present.

The CHAIRMAN then moved that Mr. Edwin James Powell be elected an Honorary Member of the Society, in recognition of his long and valuable services in the several spheres in which he had worked for upwards of 50 years. Mr. Powell, as they all knew, was not only Secretary of the Short-horn Society, but also of the Smithfield Club, which embraced so many of the breeds of live stock. Mr. Powell had also been very closely identified with the work of the Royal Agricultural Society and its Shows for many years and he (the Chairman) was sure that all who had had the advantage of knowing Mr. Powell and his work would gladly support the resolution that he be elected an Honorary Member of the Society.

The motion was seconded by Colonel STANYFORTH and unanimously adopted.

The Seal of the Society was ordered to be affixed to the Diploma of Honorary Membership; and it was decided to ask the Acting-President to present it to Mr. Powell at the General Meeting of Governors and Members, to be held that morning.

On the motion of LORD MIDDLETON, seconded by Mr. LUDDINGTON, it was resolved:—

"That the best thanks of the Society are due and are hereby tendered to:—

- (1) The officials of the General Post Office for the efficient postal arrangements in connection with the Show.
- (2) The Chief Constable of Durham for the efficient police arrangements.
- (3) The British Red Cross Society for the efficient ambulance arrangements made by them.
- (4) Messrs. Barclay & Co., Ltd., for the efficient services rendered by their officials.
- (5) Messrs. Merryweather and Sons, Ltd., for the provision of fire appliances and for the efficient arrangements in connection with the Fire Station in the Showyard.
- (6) Messrs. Haward & Sons for decorating and furnishing the Royal Pavilion.
- (7) Messrs. Kent & Brydon for providing floral decorations near the Pavilions.
- (8) Messrs. Mack & Miln for providing floral decorations near the Main Entrance."

Letters of thanks were also ordered to be sent to various other individuals and firms for assistance kindly rendered and for the loan of articles for the purposes of the Show.

Sir ARTHUR HAZLERIGG having raised the question of the shortage of catalogues on the opening day of the Show, the SECRETARY stated that the number of catalogues available this year at the commencement of the Show was in excess of the number on the first day at Cardiff last year. He explained that when the stock entries closed on May 20 the manuscript for the printers had to be prepared from the forms, and, with the limited time available, it had been absolutely impossible to get more copies before the Show opened. Their printers had as many machines as other firms, and, had it been possible, more copies would have been sent. It had become however, a physical impossibility. Arrangements had been made for a supply of 3,500 catalogues daily after Tuesday; and in view of the great demand, an additional supply of 2,000 copies without advertisements, over and above the 15,000 originally ordered, would be printed and ready for sale on the Saturday.

After discussion, it was decided to refer the matter to the Stock Prizes Committee for consideration.

## Proceedings at the General Meeting of Governors and Members,

HELD IN THE  
LARGE TENT IN THE SHOWYARD AT DARLINGTON,  
WEDNESDAY, JUNE 30, 1920.

The MARQUIS OF LONDONDERRY, K.G. (ACTING-PRESIDENT) IN  
THE CHAIR.

The ACTING-PRESIDENT, in opening the proceedings, said he was very pleased indeed to preside at that annual meeting; but, while it was a great honour and privilege for him to be there, he would like to say at once how deeply he regretted the fact that their President (H.R.H. the Prince of Wales) had been unable to preside at the show. There was no need, his lordship said, for him to enlighten the meeting as to why His Royal Highness was unable to be present. They knew that he was visiting the Dominions, and they knew also of the highly successful journey he was making amongst their relatives in distant parts of the world. It would be wrong in the circumstances for them to grudge the pleasure they would have experienced in welcoming the Prince of Wales. His Royal Highness would, many years hence he hoped, be in a position in which it would be of the highest importance that he should be acquainted personally with all the great colonial possessions. His lordship then read the following letter he had received from Sir Sidney Greville :—

St. James's Palace, S.W.

June 23, 1920.

DEAR LORD LONDONDERRY,—I am desired by the Prince of Wales to ask that you will kindly convey to the governors and members at the general meeting in the Darlington Showyard the expression of his pleasure that everything points to a most successful Show, which in numbers of entries appears to be a record one.

It is a matter of great regret that circumstances have prevented His Royal Highness from attending the Show, and, as your President, he wishes me to thank the governors and members of the Society for what they have done to bring about such an excellent result.

I know how great a pleasure it is for the Prince to be associated with the Royal Agricultural Society, and how grateful he feels to you for acting as his deputy in the presidential chair during his enforced absence from England. His Royal Highness wishes me to say how much he hopes that the efforts of the Honorary Director (Sir Gilbert Greenall) and his assistants in organising such a splendid exhibition of live stock, implements, &c., this year will prove of the greatest value to the agriculture of the country.—Yours sincerely,

(Signed) SIDNEY GREVILLE, Controller.

While they regretted the absence of the Prince of Wales, they should congratulate themselves that H.R.H. the Duke of York—(applause)—had been good enough to come and visit the Royal Show. His lordship then made reference to the great interest which had always been evinced in agriculture by the members of the Royal Family. The Duke of York had signified his desire to become a Member of the Society, and his lordship then moved his formal election.

This motion having been carried by acclamation, the Chairman handed to His Royal Highness the Member's badge. (Applause.)

Continuing his remarks, LORD LONDONDERRY said they could all see for themselves exactly what the show was. They saw around them exhibits of implements and machinery, the numbers of which had never been exceeded, and they saw also entries of stock—horses, cattle, pigs and sheep—which had never been surpassed. Consequently, they had every reason to congratulate themselves on the progress which the Royal Agricultural Society had made during the time it had been in existence. It was now twenty-five years since the Society were at Darlington before, and on that occasion they were honoured by the presence of the present King and Queen.

Looking back on what the entries were then and comparing them with the present entries, and remembering that the show now occupied 130 acres, they could realise the extent to which the scope of the show had grown in the last quarter of a century. It would be difficult to overestimate the value which the Society exercised, not only in this country, but abroad, as it was the nucleus of that great stock-breeding policy which extended and radiated throughout the whole world. This country was the reservoir to which the rest of the globe looked for the replenishing of their stock, and it was all-important that we should realise this, and make up our minds that it was a position we were determined to maintain in the future. (Applause.)

There was one name he desired specially to mention: it was that of their Honorary Director, Sir Gilbert Greenall. They all knew the great work that Sir Gilbert had accomplished for agriculture and stock-breeding; no man living had done more. They were deeply indebted to him, not only in this country but all over the world, for the work he did day in and day out and all the year round. (Applause.)

THE DUKE OF YORK, in acknowledging his election as a Member of the Society, said:—"I am greatly pleased to have been able to attend the Royal Show in the year that my brother, the Prince of Wales, has the honour to be President. I wish to take this opportunity of thanking you, Lord Londonderry, and the Council of the Royal Agricultural Society, for making me a Member. The large number of entries and the variety of the exhibits, together with yesterday's record attendance, testify to the success of the show, and to the importance of the agricultural industry in this country. (Cheers.) We cannot afford to let agriculture return to pre-war conditions—(cheers)—when it was starved and neglected. The more food we can produce at home the sooner our credit abroad will be established. (Cheers.) With scientific methods and more business-like conditions, the land must come back to the plough; for grass will not support us. The Royal Agricultural Society does much to keep the importance of the great industry of agriculture before the nation, and I congratulate those responsible for the great success of this year's show. (Cheers.)

#### **Mayor and Corporation Thanked.**

SIR GILBERT GREENALL said he had much pleasure in moving that the best thanks of the Society be tendered to the Mayor and Corporation of Darlington for their cordial reception of the Society. If those present had been in Darlington as much as he had during the past few weeks they would realise what had been done on behalf of the Society by the local authority and their officials. While it might seem invidious to mention names, he wished particularly to refer to Mr. Steavenson, the Town Clerk, and Mr. Winter, the Borough Surveyor. He spoke of them particularly because he had been associated more with them than with any other officials. He could say, however, that everybody associated with the Corporation of Darlington had done everything they possibly could to make the Show the success which it undoubtedly was. (Applause.)

Lieut.-Col. E. W. STANFORTH, in seconding, said he remembered the last time the Royal Show was held at Darlington. He could only say that the reception of the Society had never been more cordial than it had been on the present occasion. In this connection he would like specially to mention the spade work done by the late Mayor, Alderman Bates, ("Hear, hear," and applause.)

THE MAYOR OF DARLINGTON (Mr. T. Crooks), in acknowledging the vote, said he could assure the Society that from the very moment when the coming of the Royal Show to Darlington was first mentioned the Corporation had co-operated in the spirit which meant to give it most cordial and welcome support. (Cheers.) The Show had undoubtedly brought a great deal of work, but the Town Clerk and their other officials, as well as the

members of the Council, were never afraid of work ; they were willing to put their shoulders to the wheel when necessary. If the coming of the Royal Show to Darlington had done nothing else, it had taught them the value of the site of Hundens Farm. While some of them had known that particular piece of ground for many years, the Council of the Royal Agricultural Society, with their surveyor and officials, had come along and made them see that it was worth more than they had calculated.

Darlington, continued his Worship, was undoubtedly a fine agricultural centre—one of the finest in the North of England, and probably in the whole of the country. The Town Council had all along laid itself out to cater for the interests of agriculture. They used to pride themselves that they had two industries only—agriculture and railways. They were very proud of the railways, but they had other industries to-day, and were sending bridges and locomotives and parts of great steamships to all parts of the world. He heartily commended to them the words of His Royal Highness the Duke of York, and trusted that in future England would be much less dependent upon food from abroad than she was in pre-war days. The soil of the old country should be able to produce food much more plentifully than it did, and he trusted that the Show would be an incentive to the cultivators of the soil to get the full wealth that was in it. (Applause.)

**Thanks to Local Committee.**

The Hon. CECIL PARKER said it was his privilege to move "That the best thanks of the Society be tendered to the Darlington Local Committee for their exertions to promote the success of the Show." In 1895 he had had the honour of being Honorary Director of the Show. On that occasion they had had an attendance of one hundred thousand. On the present occasion that number would probably be doubled. He had great pleasure in moving the resolution.

Mr. PERCY CRUTCHLEY seconded the vote, which was heartily accorded.

Mr. W. E. PEASE in thanking the meeting for their resolution, said it had been a pleasure to the members of the Local Committee to work with the splendid officials of the Society. Since the first day Mr. McRow came down there had never been the slightest hitch, and when Sir Gilbert Greenall came on the scene things began to hum.

**Thanks to Railways.**

Colonel CORNWALLIS moved a vote of thanks to the railway companies for the facilities afforded in connection with the Show. In spite of the restrictions attendant upon Government control, the railway companies, he said, had exceeded their customary efficiency of service, and the Society was specially indebted to the North-Eastern Railway Company, who had not only handled the bulk of the traffic but had built a special dock in order to cope with the unprecedented number of live stock and implements.

The Hon. J. E. CROSS seconded the motion, which was carried unanimously.

**New Honorary Member.**

The Acting-President stated that at the Council meeting that morning Mr. E. J. Powell, the late secretary of the Shorthorn Society and the secretary of the Smithfield Club, who had done so much good work also for their Society, and who was known to almost every one there, had been elected an Honorary Member of the Society. He was sure that all Members present would endorse the Council's action. (Applause.)

His Lordship then handed to Mr. Powell the Diploma and Badge of Honorary Membership.

**Members' Suggestions.**

In response to the usual inquiry from the Chair as to whether any Governor or Member had any remarks to make or suggestions to offer,



Mr. CORBETT (Shrewsbury) said he would like to bring forward a recommendation that in future when the Society received any invitation from a city or borough to hold the Show, that the inhabitants of such a city or borough be asked if they will provide the accommodation necessary for the Members of the Society and exhibitors from a distance, to prevent them having to travel many miles to and from the Show day after day.

The CHAIRMAN explained that the Society had accepted invitations up to 1925, but promised that Mr. Corbett's suggestion would receive the consideration of the Council.

Thanks to the Chairman.

LORD BLEDISLOE said that in the absence of their beloved, popular and statesmanlike Prince, the Society were fortunate in having so capable a substitute as the Marquis of Londonderry, who was a worthy scion of a great English family which had always been conspicuous for its services to the State. The Society were much indebted to him, and he (Lord Bledisloe) desired to move that the best thanks of the meeting be tendered to Lord Londonderry for his services in the Chair. (Applause.)

The Rev. C. H. BROCKLEBANK seconded the motion, and the vote was unanimously accorded.

LORD LONDONDERRY, responding to the vote of thanks, said it was a source of satisfaction and pleasure that he had been called upon to preside at the Royal Show when it was held in a district in which his family was not unknown. He would like to say how deeply he was indebted to Mr. McRoe, their secretary, who had given him no end of assistance, during the short time he had been Acting-President; and, from the local point of view, to Mr. Steavenson for his untiring efforts to bring about the success of the Show.

### WEDNESDAY, JULY 28, 1920.

The Hon. CECIL T. PARKER (Trustee) in the Chair.

Mr. John Ashbridge, Manor House, Sneaton, Whitby; Sir Samuel Hordern, Babworth House, Darling Port, Sydney, N.S.W.; Mr. Henry King, Riston Grange, Hull; Lt.-Col. Walter M. Pryor, D.S.O., Weston Park, Stevenage; Mr. W. H. Renwick, Newbiggin, Richmond, Yorks; Mr. Robert Singleton, Layton Lodge Farm, Great Layton, Blackpool; Mr. George E. Sisterton, Sedbury Park, Richmond, Yorks; Mr. G. W. Strode, Bovingdon Lodge, Bovingdon, Herts; Lt.-Col. Harold P. Sykes, Longford Hall, Newport, Salop and Mr. Harold E. Young, Sandgate, Blundellsands, Lancashire were elected as Governors of the Society and 306 duly nominated candidates were admitted into the Society as Members.

Mr. ADEANE, in presenting the Report of the Finance Committee, said he was sure that it would be a matter of great regret to the Council to know that the Darlington Show would not be profitable to the Society, and the result was a very serious one. The "Gate" at Darlington was as good as at Cardiff, but owing to the increased railway charges, cost of labour and material, he feared from what he had heard that the loss would be considerable. The cost of the erection of the showyard at Darlington was £35,000 against £18,000 at Cardiff. What would be the loss on a bad gate if the expenses of the Society remained as at present? It might be anything from ten to twenty thousand pounds. The Council must face the position at once, and see how it could be met. In his opinion, affairs should be so arranged that an average Show would not involve a loss, and the good year should carry the bad year. A few Darlington would wipe out the whole of their reserve fund and bring the Society back to the position they were in in 1905, or worse.

He begged, therefore, to move that a Special Committee be constituted to go into the whole question of the finances of the Society and to report thereon.

Before sitting down he would like to say a word with regard to the farm at Woburn. So far as he could make out, there was a loss of something like £1,200 last year on the farm and towards that loss they had been getting an annual contribution of £500 from the Government. From a letter that had been received from the Ministry of Agriculture, however, it appeared to be doubtful whether that grant would be continued. Were they prepared to face the annual loss of £1,200?

Mr. LUDDINGTON seconded the motion. With regard to Woburn, it was a great relief to him that the Finance Committee had decided to inquire into the matter. However skilfully an experimental farm was managed in these days there must be a heavy loss, especially on land of the description they had at Woburn, and it was necessary that the matter should be gone into fully. As Chairman of the Chemical and Woburn Committee he would be most happy to give all the assistance he could.

After some discussion, in which Sir HOWARD FRANK, Colonel LANE-FOX, Sir GILBERT GREENALL, Sir WALTER GILBEY, and Colonel STANYFORTH took part, Mr. ADEANE's motion was carried *nem. con.*

On the motion of Col. STANYFORTH, seconded by Mr. H. DENT BROOKLEHURST, it was resolved that the Special Committee consist of Mr. ADEANE, Sir Gilbert Greenall, Bart., the Earl of Northbrook, Mr. R. M. Greaves, Mr. Richardson Carr, Mr. Evens, Mr. Ernest Mathews, Mr. Joseph Harris and Mr. William Harrison.

On the motion of Mr. ADEANE, seconded by Sir JOHN THOROLD, it was resolved "That in order to facilitate the winding up of the accounts for the Darlington Show as early as possible, authority be given for the issue during the recess of orders on the Society's Bankers for the payment of accounts connected with the Show."

Sir GILBERT GREENALL introduced a deputation from the City and County of Chester, who attended the meeting in support of an invitation to the Council to hold the Show in that City in 1925. The deputation consisted of Colonel W. Bromley Davenport (Lord-Lieutenant of Cheshire), Sir John M. Frost (Deputy-Mayor of Chester), the Marquis of Crewe, Sir George Dickson, Bart. (Chairman of Cheshire County Council), Mr. Alfred S. Dutton (Sheriff of Chester), Mr. G. P. Miln (Chairman of Local Committee) and Major Basil Kerr (representing the Duke of Westminster).

After Speeches by several members of the deputation, it was unanimously resolved, on the motion of Sir GILBERT GREENALL, seconded by the EARL OF NORTHBROOK: "That the invitation from the City and County of Chester to hold the Show there in 1925 be accepted."

Colonel BROMLEY DAVENPORT having thanked the Council, the deputation withdrew.

Arising out of the Report of the CHEMICAL AND WOBURN Committee, Mr. ADEANE moved:—

"That power be given to the Special Committee to give notice to terminate the tenancy of the Woburn Farm if they think it financially desirable."

Mr. LUDDINGTON seconded the motion. Personally, he said, he hoped that the Board of Agriculture and the Development Commissioners would take up a different position and give them the same assistance as they had done in the past. So long as they did this, the work could be carried on, and he hoped they would not desert the Society altogether. It was difficult to understand their action in the matter, in view of the good work that had been done at Woburn, and the problems investigated there. He trusted that it might not be necessary to take such a drastic step as that foreshadowed in the resolution.

Mr. ADEANE said he hoped there would be no misunderstanding with regard to the terms of the resolution. This matter would not come before

the Council again before a decision was arrived at. He understood that if they did not give notice by Michaelmas, they would have to wait another two years. The resolution was that power be given to the Special Committee to give notice to terminate the tenancy of the farm if they thought it financially desirable before the next meeting.

Mr. CHRISTOPHER MIDDLETON said he sincerely hoped that it would not be necessary to take the drastic step that had been mentioned. In his opinion, it would be a national loss if they had to give up Woburn, which in the past had done valuable work. He deplored the action taken by the Ministry of Agriculture. He did not think that Woburn was having fair play as compared with similar institutions. He thought that the attitude taken up by the Ministry of Agriculture was scarcely fair. Very much larger grants were made to similar institutions over which the Ministry exercised very little control or supervision; but, as regards Woburn, they seemed to have instituted a most inquisitorial manner. He hoped that in the Conference proposed with the Officials of the Ministry it would be possible to get them to adopt a more amicable attitude concerning the Farm, and he still hoped that the Committee might not find it necessary to abandon Woburn.

Mr. LUDDINGTON said he could not quite agree with Mr. ADEANE that the Special Committee should be given power to terminate the tenancy. He thought the whole Council should have a final decision in the matter. The Special Committee could be empowered to give notice so that the matter might be in order, but the whole question must come before the Council.

Mr. BROCKLEHURST believed that at the Woburn Committee meeting the previous day, a deputation had been appointed to meet representatives of the Ministry of Agriculture in September or October. Could not an earlier date be fixed in order that they might know how they stood with regard to the annual grant from the Ministry?

The CHAIRMAN said the question was that this Special Committee have power to give notice to terminate the tenancy of the Woburn Farm, and then to submit the matter to the Council.

The resolution was then adopted.

Sir JOHN THOBOLD said that the Committee of Selection had been unanimous in recommending the name of Mr. Greaves to the Council as President for the ensuing year. Mr. Greaves' services to the Society, especially as Chairman of the Implement Committee, were well known to all those present.

Sir GILBERT GREENALL had very great pleasure in supporting the proposal. No man, he said, was more deserving of the honour than Mr. Greaves.

Mr. GREAVES said he felt deeply the very great honour conferred upon him, the reason for which, he confessed, he was at a loss to understand. In electing the Chairman of the Implement Committee, the Council were conferring a great compliment on the Engineering portion of the Society's Members, and he felt sure it would be appreciated as such by all in the Implement and Engineering world. He knew that it was a very critical time in the affairs of the Society, and he should have hesitated to take office had he not known that he could rely upon the support and assistance of his colleagues. His twenty years' experience on the Society's governing body had taught him that the Council and officials had always accorded the President their support and loyalty, and, so strengthened, he felt he might undertake the duties. He could assure them that he would do his best to carry on the great work of the Society during his year of office.

The Hon. Director (Sir GILBERT GREENALL) referred to the arrangement made with the Yorkshire Agricultural Society, under which the Yorkshire Society promised a contribution to the R.A.S.E. in respect of the privileges granted to their members in connection with the Show, and

reported that he, with the Secretary, attended a meeting at York on the 17th instant, at which Mr. Hawking, Mr. Jacob Smith and Mr. John Maughan (Secretary) attended to settle the question of the amount to be received by the Royal Agricultural Society in consideration of the privileges above mentioned. It was unanimously decided that the Yorkshire Society's contribution would be £500.

The SECRETARY read a resolution which had been unanimously passed at a meeting of the Darlington Town Council held on the 8th instant:—

"Referring to the Royal visit, the Worshipful the Mayor stated that he felt sure that it had given the greatest pleasure and satisfaction to the inhabitants of the town, and he proposed, and it is unanimously resolved, that the Council do record its appreciation of the cordial co-operation of the Most Hon. the Marquis of Londonderry, K.G. (Acting-President of the Royal Agricultural Society) and of the Honorary Director (Sir Gilbert Greenall, Bart, C.V.O.), in all the arrangements that were made in connection with the presentation of the Council's address of welcome and the entertainment of His Royal Highness on the Show Ground.

"It is also resolved that the Council do offer its congratulations to the Royal Agricultural Society on the success which attended the holding of their Show in Darlington."

The following letter was read from the Durham County Agricultural Society:—

"DEAR SIR,—I am instructed by the Council of this Society to convey the best thanks of the President, Council and Members of the Society for the generous way in which the Royal Agricultural Society have dealt with this local Agricultural County Society.

"This, Sir, I can assure you, will help us to carry on, in the future, with a wider outlook, a Society which in a small way is doing a great deal of good—I am, Sir,

"Yours faithfully,

"(Signed) I. R. THORNTON."

T. McROW, Esq.

Letters were also read from Wing Commander Louis Greig, conveying the thanks of H.R.H. the Duke of York for the arrangements made in connection with the Royal Visit to the Darlington Show, and from Mr. E. J. Powell, expressing his appreciation of the Honorary Membership conferred upon him.

## WEDNESDAY, NOVEMBER 3, 1920.

The Hon. CECIL T. PARKER (Trustee) in the Chair.

Lord Chesham, Latimer, Chesham, Bucks; Mr. Henry Joseph Lynch, 388 Rua São Clemente, Rio de Janeiro, Brazil; Mr. Arthur E. Priestley, Paxton Hill House, St. Neots; Sir John F. Ramsden, Bart., Bulstrode, Gerrard's Cross, Bucks; Sir Arthur M. Sutherland, Thurso House, Newcastle-on-Tyne; Lord Treowen, C.B., C.M.G., Llanarth Court, Raglan, Mon.; and Mr. Falconer L. Wallace, Balcairn, Old Meldrum, Aberdeenshire, were elected as Governors of the Society, and 58 duly nominated candidates were admitted into the Society as Members.

The Report of the SPECIAL Committee on Finance—which, by permission of the Council, was taken next—was presented by Mr. ADEANE. The Report recommended increases in the fees payable for entries in both stock and implement departments and in the charges for admission to the Show. Recommendations were also made as to economies to be effected in the Society's operations apart from the Show, chief of which was the discontinuance of the Experiments carried on at Woburn. Acting on the power delegated to them the Special Committee had, subject to confirmation by the Council, given formal notice to terminate the tenancy of Woburn Farm at Michaelmas, 1921.

In presenting this Report, Mr. ADEANE said the proposals it contained were interdependent. It was the wish of the Committee to put forward their proposals as a whole, and only as a whole, and they asked the Council either to accept the Report or to negative it. They could not accept any amendments which affected the structure of the Report, but they would be quite willing, and it would only be right, to accept for consideration

any amendments on matters of detail. He therefore asked to be allowed to present the Report and move its adoption as a whole.

Sir GILBERT GREENALL, who seconded the adoption of the Report, stated that everything in the Show department had been cut down as far as possible; and, as they had to go to the exhibitors and ask for higher entry fees, they could not do that unless they first put their house in order.

Mr. LUDDINGTON proceeded to move that consideration of the Report dealing with the Woburn Farm should be deferred for a month, but the CHAIRMAN ruled that he could not accept this since the Report must be taken as a whole. Mr. ADEANE reiterated that the Special Committee could not accept any amendment which affected the structure of the Report, and pointed out that the matter with regard to Woburn could not be deferred for a month, otherwise the Council would have to continue its tenancy for two years.

Mr. LUDDINGTON then moved that the Report be not received, and this was seconded by Mr. MIDDLETON.

A discussion ensued, in which Mr. SMITH, LORD NORTHBROOK, Sir J. B. BOWEN-JONES, Mr. EVENS, Mr. PATTERSON, Mr. MIDDLETON, LORD POWIS, Sir ARTHUR HAZLERIGG, Mr. BROCKLEHURST, Mr. LUDDINGTON, Mr. FALCONER, Colonel WHEELER and Mr. ADEANE took part.

The amendment was put to the meeting and was lost by ten votes to thirty.

The original motion for the adoption of the Report of the Special Committee was then put and carried.

On the motion of Mr. ERNEST MATHEWS, seconded by Mr. LUDDINGTON, it was resolved:—

"That in the opinion of the Council of the Royal Agricultural Society of England the grant of a Royal Charter to the University College, Reading, raising it to the status of an independent University, would be of advantage to the interests of education and research in agriculture, horticulture and dairying."

Mr. FALCONER said he would like to move that a letter of condolence be sent from that Council to Lady McLaren, on the death of Sir John McLaren, who had been a very old Member of the Society. His was a great personality, and he had done yeoman service during the war. The motion was seconded by Mr. CROSS and carried unanimously.

It was resolved, on the motion of Mr. JOHN EVENS, seconded by Mr. TURNER, that the best thanks of the Society be offered to the Hon. John E. Cross and Mr. Burke for their services as Stewards in carrying out the Tractor Trials recently held at Lincoln. Those gentlemen, Mr. Evens said, had put in ten solid days at the trials, and previously they had been all over England inspecting ground. It was entirely due to their energy and tact that the trials had been so well conducted.

Mr. CROSS regretted very much that Mr. Graaves was not able to be present at the meeting that day. The trials had been carried out, he trusted, to the satisfaction of the Society, and he hoped that valuable results would accrue to agriculture and the motor tractor trade in general. Mr. Burke and himself, as Stewards, had presented a report, and they desired especially to thank the farmers who had provided the land for the trials. He was glad to be able to report that all the land had been ploughed, and those farmers were satisfied with the condition in which it had been left. He would like to refer to the splendid services rendered by Mr. Jackson as Superintendent of the trials. Nothing had been too much for him, and his assistance had been invaluable.

On the motion of Mr. CROSS, seconded by Mr. BURKE, the following resolution was passed:—

"That the best thanks of the Society be conveyed to the Society of Motor Manufacturers and Traders for their kind co-operation in arranging and carrying out the recent trials of agricultural tractors in the neighbourhood of Lincoln. At the same time the Council desire to place on record their appreciation of the valuable services rendered by the individual members of the Society of Motor Manufacturers and Traders who acted on the Committee appointed to carry out the trials."

The Report of the Council to the Annual General Meeting of Governors and Members, to be held at the Royal Agricultural Hall, Islington, at 2.30 p.m., on Wednesday, December 8, was prepared and ordered to be issued.

Authority was given for the Seal of the Society to be affixed to the agreement with the Corporation of Derby in connection with the Show of next year.

At the close of the Council Meeting, the CHAIRMAN said he had a painful duty to perform, viz., to read a letter from the Secretary to Mr. Adeane, (Chairman of the Finance Committee, announcing his resignation.

On the motion of the CHAIRMAN, it was unanimously resolved that the resignation be accepted with regret, and that the Finance Committee be authorised to make the necessary arrangements for the appointment of a successor, and also to settle the question of a pension to the retiring Secretary, who was fully entitled to one after his forty-three years' service to the Society.

### WEDNESDAY, DECEMBER 8, 1920.

The MARQUIS OF LONDONDERRY (Acting-President) in the Chair.

At the commencement of the meeting, the HON. CECIL T. PARKER was called to the Chair, pending the arrival of the Acting-President.

Mr. Edwin F. Ann, West Parkfields, Derby; Sir R. C. Brooke, Burt., Norton Priory, Kuncorn; Mr. John C. Duffus, Penniwells, Elstree; Mr. A. W. Hickling, Wing Old Hall, Rutland; The Earl of Kimberley, Kimberley House, Wymondham; The Earl of Lisburne, Crosswood, Cardiganshire; Lieut.-Col. W. N. Pilkington, D.S.O., Home Farm, Rainford Hall, St. Helens; Mr. J. W. Wood, Staincross Hall, Barnsley; and Capt. H. Fitz-Herbert Wright, Yeldersley Hall, Ashbourne, were elected as Governors of the Society, and 239 duly nominated candidates were admitted into the Society as Members.

The CHAIRMAN observed that the addition of those names brought the total membership of the Society to over 12,000.

The DUKE OF PORTLAND, as President of the AGRICULTURAL RELIEF OF ALLIES Committee, offered to the Society a bronze bust of H.M. the King of the Belgians, which he (the Duke of Portland) had had the honour of receiving recently from the Provincial Government of Western Flanders. His Grace said that when he had visited the devastated regions of Belgium a very cordial reception was accorded to him and to other members of the Committee, and as a mark of their gratitude the Provincial Council asked him, as the President of the Committee, to accept the bust and an album containing the signatures of all those small farmers in Flanders who had received gifts of stock from the Relief Committee. His Grace trusted that the bust and album would form an interesting permanent memorial of the work the Society had done through the AGRICULTURAL RELIEF OF ALLIES Committee.

The CHAIRMAN gratefully accepted the bust and the album in the name of the Society.

On the motion of Mr. ADEANE, the Report of the FINANCE Committee, with the exception of two paragraphs, which required separate resolutions, was adopted.

*[Lord Londonderry arrived at this stage and took the Chair.]*

In moving the adoption of the Committee's recommendation with reference to the retirement of the Secretary, Mr. ADEANE said that the recommendation was in the following terms :—

The Committee considered the question of Mr. McKow's resignation, and recommend that the Society do grant Mr. McKow a retiring pension of £500 per annum in lieu of the pension or capital sum to which he would have been entitled on retirement or after attaining the age of 65 under the Society's scheme for the superannuation of officials, and that the policy on his life be surrendered and the surrender value be invested by the Trustees of the Superannuation Fund by way of addition to that fund.

Mr. ADEANE said the Council would learn with very great regret of the resignation of their old friend, Mr. McRow. (Hear, hear.) He had spent over forty years in the service of the Society, of which fifteen had been in the capacity of Secretary. He first entered the office in the late 'seventies as a junior clerk under Mr. H. M. Jenkins, and steadily advanced to the position of Chief Clerk, which he resigned in 1904 in order to become Secretary of the Royal Agricultural Hall Company. After the resignation of Sir Ernest Clarke he returned to the R.A.S.E. as its Secretary in 1906. The performance of Mr. McRow's duties had been characterised by great courtesy, tact and loyalty, and he had won the regard of all the Members of the Society. The Council regretted the ill-health which was the cause of Mr. McRow's retirement, and hoped that it might soon be restored so that he might enjoy many years of well-earned rest. Mr. McRow carried with him the best wishes of every Member of the Society. (Applause.)

The resolution was carried unanimously.

The SECRETARY said he was gratified by Mr. Adeane's extremely kind remarks, and he also wished to thank the Council most sincerely for the generous arrangement they had made for him in his retirement.

Mr. ADEANE said that the remaining paragraph of the report related to the presentation of the accounts of the Darlington Show. It would not be necessary to go into details with regard to the figures, since they had been already considered by the Special Committee lately appointed by the Council. He would, however, remind them that the loss on the Darlington Show was £7,766, and he would point out that the Committee had withheld £2,000 of cheques because there was not money with which to meet them. That was a situation which arose for the first time in his recollection. The Society's liabilities up to the present were:—Loss on the Darlington Show, £7,766; excess expenditure, on the Society's Journal, £1,405; excess expenditure on the tractor trials, £1,148, making a total of £10,319. To meet this, a sum of £3,535 had been utilised out of the Reserve Fund; there were further available reserves of £456, and there was also the contribution set aside to meet possible losses on the Show of £2,500. That gave a total of £8,491 to set against the liability of £10,319, showing a balance on the wrong side of £3,828. He therefore asked the Council to permit him to apply to the bankers for an overdraft up to £4,000 in order that they might pay their way.

Mr. MIDWOOD said he could not understand why it should be necessary to withhold £2,000 of cheques when the Society had funds amounting to between sixty and seventy thousand pounds. He was afraid that the Council had grown panicky. There was no doubt that the expenses of the Show were very much heavier than before, and it would seem from the report of the Special Committee that they were about to do some things which might reduce the membership of the Society. They proposed to reduce the subscription to the Royal Veterinary College to £200 and were giving up the subscription of £10 to the Conjoint Board of Scientific Societies. Further, by giving up Woburn they would give up *practice*, and by reducing or abolishing the other subscriptions they would be giving up *science*. He would suggest that the subscription of Members and Governors should be doubled, and he did not think that such a step would be followed by the loss of even 25 per cent. of the Members. Members were still going to receive free entrance to the Show on each day, which was worth 25s.; they would still receive the Journal and various other advantages, and he could not help thinking that for all this £1 was too cheap. Farmers were much better able to pay £2 now than 10s. a few years ago. Such a step would relieve the Society from the present apparent difficulty, and it would obviate the necessity for raising the entry fees. A big Show was necessary, and the Society could not maintain the supremacy of the Show in the world unless they had a large entry.

Mr. FALCONER seconded the proposal to double the subscription, and

added that if he was in order he would give notice that at the February meeting of the Council he would ask that that part of the Special Committee's report referring to Woburn should be deleted.

The ACTING-PRESIDENT thought that some notice should have been given of Mr. Midwood's proposal, and he felt bound to rule it out of order. In reply to a question by Mr. Midwood, the ACTING-PRESIDENT said that the matter might certainly be put down for the next Agenda.

Mr. MIDDLETON asked whether in the interval the matter might not be considered by the Special Committee.

Mr. ADEANE said that the Special Committee had presented its report and now ceased to exist. As a matter of fact, this question was very carefully considered by the Special Committee, who came to the conclusion that to raise the subscription would be taking too great a risk.

Mr. MIDDLETON then asked that the FINANCE Committee should consider it.

Mr. HARRISON said the Special Committee came to the conclusion that to raise the Members' subscription would result in the loss of many more than 25 per cent. of the Members. They had to remember that a large number of the Members were not interested altogether in agriculture, and joined the Society when the Show visited their neighbourhood, and they might object to a subscription of £2.

The recommendation regarding the overdraft was then adopted.

The MAYOR OF DERBY (Alderman Laurie) handed to the Acting-President a cheque for £2,000, being a contribution from the Local Committee to the Show Fund, together with the agreement with the Mayor and Corporation of Derby.

In presenting the JOURNAL Committee's Report, Sir JOHN THOROLD expressed the indebtedness of the Society to Mr. R. W. Moffrey for his many years of service as Printing Auditor to the Council. He might add that in securing Mr. G. W. Riley, M.B.E., his successor, they were extremely fortunate.

Mr. LUDINGTON presented the Report of the Chemical and Woburn Committee, including a statement by that Committee, embodying their dissent from the conclusions come to by the Special Committee regarding the Woburn Experimental Farm. Mr. LUDINGTON, in presenting this report, said it was a matter of great regret to his Committee that when the Special Committee was appointed to consider the finances of the Society they did not take the WOBURN Committee fully into their confidence, and that they did not submit their report upon Woburn for the remarks and criticisms of the WOBURN Committee. Many sitting on that Committee had been members for a long time and no one knew better than they the nature of the experiments and their cost. It was felt that there might have been a joint consultation, as the result of which alterations might have been made in the conduct of the farm and economies effected, and the object in view might have been attained in a friendly and cordial way, without it being necessary to take such a drastic step as the discontinuance of the farm. He wished especially to emphasise the fact that in their report the Special Committee made no mention of the promise of the grant of £500 a year by the Ministry of Agriculture, and one Member of the Council who had supported the Special Committee had informed him that he should have taken a very different view of the matter had he had any idea of the promised £500.

As Chairman of the Chemical and Woburn Committee he (Mr. Ludington) had seconded the appointment of the Special Committee. He had volunteered to give information, and it was a matter of great disappointment that his Committee was not officially represented on the Special Committee. He would also like to say that the interest in the scientific work of the Council was not entirely confined to the Members of the Society. The CHEMICAL Committee knew, as the result of letters which had appeared



in the Press, that the outside world was greatly interested in what was carried on at Woburn, and regretted the abandonment of that work. He had received a letter from Sir Daniel Hall on the subject, which indicated that the abandonment of the farm was also a matter of regret in official circles.

The Woburn Committee fully recognised the serious losses the Society had sustained at the recent Show, but they felt that the Council ought not to lose their heads and act in a panic. If care was taken, certain economies effected, and certain works carried out, they might look forward to a restoration of the old position in the near future and recouping those losses. When that happened and confidence was restored, it would be a matter of lasting regret that the lead which the Society had taken in scientific agricultural experiments for forty-four years had been rashly thrown away and that the proud position which the Society once held had been lost for ever.

Mr. ADEANE said he thought it must be realised that the whole of the Special Committee's report was carefully debated at the last meeting of the Council, was passed by a large majority, and therefore was a *chose jugée*. No one could object to the very courteous manner in which Mr. Luddington had placed the views of the Chemical and Woburn Committee before the Council, and if he (Mr. Luddington) would limit his remarks to asking the Council to receive the statement of the Committee so that it could be placed on record, the Special Committee would have no objection. But if he asked the Council to adopt that statement there would be considerable objection on the part of the Special Committee, for it really amounted to asking the Council to stultify its action of a month ago. In paragraph 3 of the Chemical and Woburn Committee's statement it was asserted that "estimates put forward by the Special Committee are exaggerated and misleading." To that statement he was bound, on behalf of the members of the Special Committee, to take the strongest exception. To put forward "exaggerated and misleading" estimates amounted to misrepresentation. The Special Committee, from that point of view, must be either knaves or fools, but they were neither the one nor the other; they were honest men trying to do their duty by that Council. He demurred altogether to the idea put forward that they were acting in a panic. To grasp the nettle firmly did not mean that they were in a panic, and to deal with a serious question in time was the security of an institution such as that. Although they were looking forward to a big Show and a successful Show at Derby, it must be remembered that they could not have Derbys, Darlington and Cardiff always. He had in his mind the fact that after Derby they were going to Cambridge, and if they had a loss of £7,000 at Darlington, where their receipts in bulk showed an increase of over £6,000 as compared with Cardiff, they might have a loss of anything up to £20,000 at Cambridge, where there was a very small population to draw from. If the Special Committee had been guilty of misrepresentation, they were not fit to hold the positions they did hold on that Council. It was entirely a matter for the Council to decide. The Special Committee adhered to every statement contained in their report.

Sir BOWEN BOWEN-JONES said that in the statement of their position by the Woburn Committee the Special Committee were accused of making exaggerated and misleading statements, and while he did not suppose any Member of the Council would be so dishonest as wilfully to mislead the Council, there did seem to be some perverse peculiarity of their minds. (Laughter.) He wished to show that the statements were misleading. The Special Committee put down as expenses at the farm £235 as the yearly cost of the experiments under the Hills' Bequest, and he asked whether that was not misleading. Then, again, the Special Committee's report said that £450 of Dr. Voelcker's salary should be set down to the management or supervision of the farm, and he asked whether that was not exagger-

ated. A moderate sum of £150 or £200 was quite enough to cover this expense. As he had pointed out at the last meeting, the illustrious chemist, Dr. Voelcker's father, was allowed £100 extra on his salary for supervision of the Woburn Farm. With all due respect to the Special Committee, he contended that the report on the cost of the Woburn Farm was both exaggerated and misleading.

Mr. OVERMAN, speaking as a farmer, said he sympathised with Mr. Luddington and the Woburn Committee very deeply, but in July they appointed a Committee, consisting of gentlemen whom they all trusted, to consider the position of the Society, and they had put forward certain means of retrenchment. As farmers they must recognise that when passing through a financial crisis the first thing to be done was to cut their garment according to their cloth. He was sorry to see Woburn go, but if they were going to make revenue meet expenses, he, for one, felt that the Committee had done the right thing. He questioned whether the laboratory work to-day was necessary, having regard to the facilities afforded by the County Council; at the same time he did not want to belittle in any way the work done by his friend, Dr. Voelcker.

Mr. HARRISON said there was no doubt that the interest of Members in the work at Woburn was very small indeed. Speaking as representing the agricultural machinery interest, it was his opinion that the exhibitors of agricultural machinery would on the whole willingly accept the increased charges for space in order to help the Society, but, at the same time, the manufacturers would be the first to deprecate any expense on the part of the Society that could properly be avoided, and many of them looked upon Woburn as a kind of financial excrescence that could be very well done away with.

Sir GILBERT GREENALL said he must support what Mr. Adeane, as the Chairman of the Special Committee, had said. His own view was that the adoption of this report would practically constitute a vote of censure on the Special Committee.

Mr. LUDDINGTON interposed to say that the Chemical and Woburn Committee would accept the suggestion of Mr. Adeane that the statement should be *received*. They had no wish to move a vote of censure, and as long as the Committee's statement appeared on the Minutes they would be perfectly satisfied.

Sir GILBERT GREENALL said that in that case he had nothing more to add.

The Council then formally *received* the statement of the Chemical and Woburn Committee with regard to the Woburn Farm and *adopted* the remainder of the report.

On the motion of Mr. MANSELL, seconded by Mr. FALCONER, it was resolved that the Council should formally call the attention of the Ministry of Agriculture to the increasing number of outbreaks of sheep scab and ask them to take drastic measures for its eradication.

The following Standing Committees were appointed for 1921:—Finance, Journal and Education, Chemical and Woburn, Botanical and Zoological, Veterinary, Stock Prizes, Implement, Showyard Works, Selection, Dairy and Produce, and Special. The present members were (with some exceptions) reappointed to those Committees. The Hon. Cecil T. Parker, Sir Arthur G. Hazlerigg, Bart., and the Hon. John E. Cross were added to the Committee of Selection. Mr. Henry Overman was added to the Veterinary Committee; Mr. A. M. Montgomery to the Stock Prizes Committee; Mr. John Evens to the Implement Committee, and Mr. John T. C. Eadie to the Showyard Works Committee.

## Proceedings at the Annual General Meeting of Governors and Members,

HELD AT THE ROYAL AGRICULTURAL HALL, ISLINGTON.

WEDNESDAY, DECEMBER 8, 1920.

**H.R.H. THE PRINCE OF WALES, K.G. (PRESIDENT), IN THE CHAIR.**

H.R.H. THE PRESIDENT, in opening the proceedings, said :—I am very proud indeed to be present here to-day. I am sorry I was unable to attend the Royal Show at Darlington this summer, but, as you know, I was away in Australia and New Zealand. I had an opportunity there of seeing the splendid way in which they have developed agriculture, and I was present at two very fine shows held at Brisbane and Melbourne. I also had the opportunity of visiting both cattle and sheep stations. The progress of the work of the Society during the past year under the acting Presidency of the Marquis of Londonderry is set out in the report of the Council. It is satisfactory to learn that the number of Governors and Members on the books has reached a figure never before attained, being 453 more than at the end of last year. (Applause.) While this is a good sign and speaks much for the development of the Society, perhaps I may be allowed to express the hope that Members will not cease their efforts to obtain new recruits. As regards the Show held at Darlington this year, it deserves to rank amongst the finest of the seventy-nine annual exhibitions of British live stock and agricultural machinery that have been held by this great national Society. The large attendance showed that this annual event is still regarded with favour by the public, and, had the weather not broken down, there might have been a record. As a matter of fact, my brother who was there has told me all about it. The Society is once more indebted to Sir Gilbert Greenall. I know as well as you the splendid work he has done as Honorary Director of the Show for so many years. (Applause.)

With such a splendid Show, it is disappointing to learn from the accounts that there is a deficit; but the Council, with commendable promptitude, have caused full investigation to be made into the financial position of the Society. As the result of the Special Committee's recommendations, which the Council have adopted, there is every reason to hope that the Society's income in future will be sufficient, at all events, to meet its expenditure. But it is evident that the carrying on of the Show under the altered conditions that prevail in the country will require the constant attention of the Council.

Next year the Show will be held at Derby. We are indebted to the various Breed Societies and to the Local Committee for liberal contributions to the Prize Fund, which will enable the Society to offer a classification on the customary wide basis for all descriptions of stock.

The Agricultural Relief of Allies Committee, called into being by the Society in 1915, have now almost completed their labours. Thanks are due to all those who have contributed to the fund, and the Committee are to be congratulated on the success which has attended their efforts on behalf of the farmers in the war-stricken areas of the allied countries.

With these few remarks, we will pass on to the first business on the agenda, which is the presentation of the balance sheet. As stated in the report, this appears in Volume 80 of the Journal issued to members this year. The Darlington Show accounts are in your hands.

### Adoption of Report.

Sir DOUGLAS NEWTON (Croxtan Park, St. Neots) rose with the greatest possible pleasure to move the adoption of the report, which had been circulated and was in the hands of all those present, so that the meeting would not expect him to go into the details of it. He ventured to think

that the report was most satisfactory, and bore testimony to the vitality of the Society, which occupied a strong position at the present time. There were many agricultural organisations distributed throughout the country dealing with the different aspects of agriculture, but there was no Society like theirs of a non-party character that existed solely for the development of the great agricultural industry. The financial situation was a matter which had given great concern to some Members of the Society. All Members present would be glad to hear His Royal Highness say that the Special Committee had been promptly appointed to go into the finances of the Society. After all, economic conditions had not been settled even in the last few months, and it would, he thought, have been very exceptional if the Society had not experienced financial difficulties in the present circumstances. In the Eastern Counties they were looking forward to the visit to Cambridge in 1922, when the Society were assured of the warmest welcome.

Dr. R. SHIRRA GIBB (Berwickshire), in seconding, said the report was most satisfactory except for one particular point, on which he thought those present would all agree the Executive of that great Society were not to blame.

The report was then adopted.

#### **Election of President.**

Sir HENRY REW moved "That Mr. R. M. Greaves be elected President of the Society, to hold office until the next ensuing annual general meeting." It was, Sir Henry said, entirely unnecessary for him to commend this motion to the acceptance of those present.

The resolution was seconded by Mr. J. C. WINN (Yorkshire), and unanimously passed.

Mr. GREAVES expressed his appreciation of the great honour they had done him. He was not so foolish as to think he had been elected for any merits of his own, but, in selecting as their President the Chairman of the Implement Committee, the meeting was paying a great compliment to those Members of the Society who were connected with the implement and engineering side of agriculture. He felt that every one engaged in the manufacture of mechanical appliances, which to-day formed so large a part in the equipment of the farm, would appreciate the compliment. He knew that it was a critical moment in the history of the Society. Like other institutions, they were faced with the enormous rise in the cost of everything. These problems would entail the exercise of wisdom and untiring care on the part of the Council, who would, he felt sure, do their utmost to make ends meet. He would have hesitated to take office had he not been convinced that the cordial sympathy and loyal support which had always been accorded to the occupant of the Chair would also be extended to him during the next year.

#### **Election of Trustees.**

H.R.H. THE PRESIDENT announced that the following twelve Trustees had been nominated by the Council in accordance with the by-laws:—

H.R.H. the Prince of Wales, K.G., York House, St. James's Palace, S.W. 1.

C. Adesane, C.B., Babraham Hall, Cambridge.

The Duke of Bedford, K.G., Woburn Abbey, Bedfordshire.

Sir J. B. Bowen-Jones, Bart., Council House Court, Shrewsbury.

Col. F. S. W. Cornwallis, Linton Park, Maidstone, Kent.

The Earl of Coventry, Croome Court, Severn Stoke, Worcestershire.

The Duke of Devonshire, K.G., Government House, Ottawa, Canada.

Sir Gilbert Greenall, Bart., C.V.O., Walton Hall, Warrington.

Lord Middleton, Birdsall House, Malton, Yorks.

The Earl of Northbrook, Stratton, Micheldever, Hampshire.

The Hon. Cecil T. Parker, The Grove, Corsham, Wiltshire.

Sir John H. Thorold, Bart., Old Hall, Syston, Grantham.

On a show of hands they were declared re-elected as Trustees, to hold office until the next ensuing annual general meeting.

#### Election of Vice-Presidents.

The Vice-Presidents were elected in a similar manner, their names being :—

C. Colman-Rogers, Stanage Park, Brampton Bryan.  
 Percy Crutchley, Sunninghill Lodge, Ascot, Berkshire.  
 The Earl of Derby, K.G., Knowsley, Prescot, Lancashire.  
 The Right Hon. Sir Alwyn E. Fellowes, K.C.V.O., Honingham, Norwich.  
 R. M. Greaves, Wern, Fortmadoc, North Wales.  
 Ernest Mathews, Little Sharncliffe, Atherston, Bucks.  
 The Duke of Portland, K.G., Welbeck Abbey, Worksop, Notts.  
 The Earl of Powis, Powis Castle, Welshpool, Mont.  
 Frederick Reynard, Sunderlandwick, Driffield, Yorkshire.  
 The Duke of Richmond and Gordon, K.G., Goodwood, Chichester.  
 Lieut.-Col. E. W. Stanforth, Kirk Hammerton Hall, York.  
 The Earl of Yarborough, Brocklesby Park, Lincolnshire.

#### Election of Auditors.

On the motion of Mr. J. HERBERT TAYLOR, seconded by Mr. J. P. ROBERTS, it was resolved : " That the best thanks of the Society be tendered to Messrs. Jonas M. Webb, Hubert J. Greenwood and Newell P. Squarey for their services as auditors, and that they be elected for the ensuing year."

#### Elections to the Council.

H.R.H. THE PRESIDENT then reported, in accordance with By-law 87, the names of the following ordinary members of the Council who had been elected to represent the several divisions of the Society included in Group " A," in order that the meeting might take cognisance of their election :—

Northumberland : G. G. Rea, Doddington, Woner, R.S.O. ; A. H. Ridley, Park End, Wark-on-Tyne.  
 Yorks (North Riding) : Major Clive Behrens, Swinton Grange, Malton ; C. W. Walker-Tisdale, The Dairy, Northallerton.  
 Lancashire and Isle of Man : W. Fitzherbert-Brockholes, Cloughton Hall, Garstang ; William Harrison, Albion Iron Works, Leigh ; Sir John O. S. Thursby, Bart., Ormerod House, Burnley.  
 Cheshire : Hon. John E. Cross, High Legh, Knutsford ; (Capt. W. H. France-Hayhurst, Bostock Hall, Middleswich ; G. Norris Midwood, The Grange, North Rods, Congleton.  
 Derby : J. T. C. Eadie, Aldershawe, Lichfield.  
 Northampton : F. H. Thornton, Kingshorpe Hall, Northampton.  
 Norfolk : Davis Brown, Marham Hall, Downham Market ; Henry Overman, Weascluhan, Swaffham.  
 Bedford : John Howard Howard, Clapham Park, near Bedford.  
 Hertford : Richardson Carr, Mill Lawn, Dury, Brockenhurst, Hants.  
 Middlesex : A. W. Perkin, Greenford Green, Harrow.  
 Stafford : John Myatt, Lincoln House, Shenstone, Lichfield ; R. G. Patterson, Aston Hill, Stafford.  
 Worcester : Col. E. Vincent V. Wheeler, Newnham Court, Tenbury.  
 Monmouth : Col. Edward Curre, Itton Court, Chepstow.  
 Cornwall : Brookling Trant, Trethawle, Liskeard.  
 Dorset : Arthur Hiscock, Manor France Farm, Stourpaine, Blandford.  
 Hampshire and Channel Islands : James Falconer, Northbrook Farm, Micheldever Station ; Capt. Percy W. Soward, Weston, Petersfield.  
 Scotland : Andrew M. Montgomery, Netherhall, Castle Douglas, N.B.

#### Members' Remarks.

In response to an inquiry from the Chair as to whether any Governor or Member had any remarks to make or suggestions to offer for the consideration of the Council,

Mr. P. W. ROBSON (Lincoln) said he had been asked by some of his fellow members of the Agricultural Engineers' Association to speak on Clause 9 on page 4 of the report. Substantial concessions in railway rates had been obtained for exhibitors of live stock, and his Association desired him to ask the Society to approach the Minister of Transport with a view to the restoration of the concessions formerly enjoyed by the agricultural engineering industry with regard to the sending of exhibits to agricultural shows.

Mr. S. G. HOWARD (Kirtling, Camb.) said he was one of the small tenant farmers who were not in a position to exhibit stock at the Society's Show. The report stated that the Experimental Farm at Woburn—which was to be given up—had in the past made valuable contributions to agricultural research. He could not for the life of him see why Woburn should not continue to make such contributions. It seemed to him to be panic economy to scrap Woburn; for those experiments were very useful to the smaller farmers who would rather look to the Society than to their County Council to assist them in such matters as the best manures to use, the best crops to grow, and the best seeds to sow on certain land. He was sure that if tenant farmers felt they were being left out in the cold there might be a serious decrease in the membership. If, however, Woburn had to be given up, he did hope they would take on some other farm and continue the investigations to which the small fry of the Society attached the greatest importance.

Mr. F. W. GARNETT (Dalegarth, Windermere) also expressed his regret at the passing of Woburn. He could not but feel that the giving up of the Experimental Farm was a retrograde step.

THE MARQUIS OF LONDONDERRY (Acting-President) explained that this matter had been very carefully considered by the Council both at the meeting held that morning and at the previous meeting, and it had been decided that the farm should be discontinued. The question of economy was uppermost in everybody's mind at this moment—not only national economy, but in all institutions similar to theirs and on the part of individuals. It was no use the Society controlling an income if they did not consider their expenditure in relation to that income. The Council, as the representatives of the Members, had gone into this matter very fully, and their action had not been lightly taken. Their only desire was to act in the best interests of that great Society as a whole.

Mr. H. L. STOREY (Bailrigg, Lancaster) remarked that very little was said in the report as to how it was proposed to make ends meet in future. Had the Council taken any steps to reduce the expenditure on the fitting up of the showyard? No doubt they had considered it, but he thought that there should have been some reference to it in the report.

LORD LONDONDERRY said it was a fact that there had been a deficit, which they all regretted, on the holding of the show at Darlington. When they really considered the position, the fact was not very surprising. They had had to deal with practically a new state of affairs, for the cost of everything was something it was impossible to estimate. The cost of labour had increased, and was increasing every day, so that it was difficult to make an accurate forecast. That there had been a deficit was a matter for regret but not for pessimism. All present would recognise that the Council had taken the strong course, and that the arrangements made for next year, based on the information obtained at Darlington, would not only enable them to make ends meet, but, he hoped, make a profit on next year's Show.

Mr. W. G. MILLAR (Bampton, Oxon) asked permission to refer to the question of the railway charges for the conveyance of live stock exhibits to shows. He understood that by the concession which had been granted, fodder sent with the animals was to be conveyed free, but in his own case he had been charged £30 for conveyance of cattle and £17 10s. extra for the conveyance of fodder, which had been put in the truck with the animals. If the Ministry of Transport were going to charge like that he could not see that any concession had been made.

SIR GILBERT GREENALL explained that the free conveyance of fodder in pre-war days was not part of the concession. It might have been sneaked in—(laughter)—but it was never allowed. When they went as a deputation to the Minister of Transport they did their best and managed to get the authorities to say that they would convey free with the animals provender

for consumption *on the journey*. That, however, was a concession they had never had before.

Mr. DAVIS BROWN said he understood that the railways were going to do more after the 1st of January.

Sir GILBERT GREENALL: "Things are going to be better after the 1st of January." (Laughter.)

H.R.H. THE PRESIDENT stated that all the suggestions put forward would receive the attentive consideration of the Council.

#### **Testimonial to Mr. E. J. Powell.**

Sir GILBERT GREENALL said that many of those present would doubtless remember that at the general meeting of Members in the Darlington Showyard the Certificate of Honorary Membership of the Society had been presented by the Chairman, Lord Londonderry, to Mr. Powell, the late Secretary of the Shorthorn Society. Since that interesting occasion the Shorthorn Breeders' Club had instituted a testimonial to Mr. Powell, and he thought they would agree that as Mr. Powell was Secretary of the Smithfield Club, and in view of his connection with the Royal Agricultural Society, it would be an appropriate occasion on which to present him with this testimonial, consisting of an illuminated address and a cheque for one thousand guineas from 650 subscribers. He very much regretted that Lord Northbrook, who, as Chairman of the Testimonial Committee, would have introduced this matter to the notice of His Royal Highness at the meeting, was unfortunately confined to his house through illness. The President of the Shorthorn Society, Lord Merthyr, he was happy to say, was present, and had kindly promised to say a few words.

LORD MERTHYR, as President for the year of the Shorthorn Society, said it gave him great pleasure to have that opportunity of saying a few words on the occasion of the presentation of the testimonial to their late Secretary, Mr. E. J. Powell. Mr. Powell, as Shorthorn breeders knew, had occupied the position of Secretary of that Society and Editor of Coates's Herd Book for more than thirty years—the best part of the business life of many a man. He thought they would recognise that although many of the great breeders, the founders of the breed, had had their names recorded in history, and handed down to posterity, and successful breeders were well known for their success, there had been done man who had spent thirty years in Hanover Square doing essential work, and perhaps his name might only be brought forward to members of the Shorthorn Society. In the establishment of the premier breed of pedigree cattle in this country, Mr. Powell had done work of national importance. The idea of the testimonial was initiated by Sir Gilbert Greenall at a meeting of the Shorthorn Breeders' Club in June last. It had then been mentioned that while the intrinsic value of their gift to Mr. Powell might not be great, he would be gratified in seeing the names of those for whom he had worked so long associated with the testimonial. They had been told that their Society had not gone ahead as it should do, and he would take the opportunity of saying that during the war years Mr. Powell's staff had been depleted, and, not only that, but he was given a great deal more work to do. Consequently, he had been called upon to increase speed, and was, in fact, carrying extra weight. They all regretted the resignation of Mr. Powell, as his great accumulation of knowledge, cheery manner, and readiness to take on extra work, had been a great standby for the Society. He had now been made a Life Member of the Shorthorn Society, and had undertaken to help the Council in every way. He (Lord Merthyr) hoped that Mr. Powell might be spared for many years to enjoy the retirement to which he was entitled. (Applause.)

H.R.H. THE PRINCE OF WALES, having read the terms of the illuminated address, presented it to Mr. Powell, together with the cheque for one thousand guineas.

Mr. E. J. POWELL, in acknowledging the testimonial, said he felt it a great honour to receive, at the hands of His Royal Highness, the very handsome present they had been good enough to make him. His connection with Shorthorns had covered a great many years, for he had begun with the formation of the Society, and for thirty-three years he had been its Secretary. With the assistance and good feeling of the Council it had been a very happy time for him, and he was glad to be able to leave the Society in its present prosperous position. He was quite sure that under the control of those noblemen and gentlemen who carried on the Society the breed would go forward and the Society increase in prosperity.

**Thanks to H.R.H. the President.**

THE EARL OF COVENTRY said that was one of the occasions when one welcomed old age, because he thought it was his long period of membership of the Society to which he could attribute the honour of being asked to propose a vote of thanks to His Royal Highness, the retiring President. It was only last week that he was at the Birmingham Show, where he happened to be President for the year, and a gentleman connected with the Press congratulated him on being President, and asked him if he had filled the office before. His lordship had replied that he had been President on a former occasion, but it was such a long time ago that he really could not remember the date. The Press gentleman would not be satisfied, and went to the office to pursue his inquiries. He had returned to his lordship and said: "I find you were President fifty-one years ago." He (Lord Coventry) said he wished for the moment that this gentleman had not been so diligent in his investigation. (Laughter.) He was sure they were all glad to see His Royal Highness that day—(applause)—presiding over the meeting, and no one could have done it better. The Royal Family had always been devoted to agriculture, and he was glad to see His Royal Highness had taken up the pursuit himself with good breeds of cattle and sheep, not only in this country, but also abroad. He understood that the Prince had some excellent cattle on his ranch in Canada. They welcomed him on his return, and thanked him for the excellent work he had done during the past year.

Sir J. B. BOWEN-JONES seconded the motion. As ex-President of the Society he well recollected the visit of His Royal Highness to Cardiff, when he delighted them all by the great interest he evinced in everything in the agricultural exhibition there. He had one fault to find with His Royal Highness, and that was his energy was so indomitable that he (Sir Bowen) had been unable to keep up with him.

The resolution was carried, the Members present giving three hearty cheers.

H.R.H. THE PRINCE OF WALES, in acknowledging the vote of thanks, said: I am afraid I have not done very much work. In fact, I might almost be described as an absentee President, but I want to assure you of the very great interest I take in the work of the Society and in agriculture generally, not only in the old country, but throughout the Empire. I want especially to thank Lord Londonderry for all he has done on my behalf. (Applause.)





# AWARDS OF PRIZES AT DARLINGTON, 1920.

## ABBREVIATIONS.

- I., First Prize. II., Second Prize. III., Third Prize. IV., Fourth Prize.  
V., Fifth Prize. E. N., Reserve Number. H. C., Highly Commended.  
C., Commended.

**E.B.**—The responsibility for the accuracy of the description or pedigree, and for the eligibility to compete of the animals entered in the following classes, rests solely with the Exhibitors.

Unless otherwise stated, each Prize Animal in the Classes for Horses, Cattle, Goats, Sheep, and Pigs, was "bred by Exhibitor."

## HORSES.

### Shires.

#### Class 1.—*Shire Stallions, foaled in 1919.*<sup>1</sup>

[10 entries.]

No. in  
Cate-  
logue.

- 6 I. (C20).—SIR BERNARD GREENWELL, BT, Marden Park, Woldingham, Surrey, for Marden Premier, bay, bred by the late Sir Walpole Greenwell, BT, Marden Park, Woldingham; s. Champion's Goalkeeper 30286, d. Marden Dorina 75212 by Marden Forest King 28534.  
8 II. (A10).—JOHN W. MEASURES, Dunsby Hall, Bourne, Lincs., for Lincoln Ben, bay, bred by Charles Morris, Highfield Hall, St. Albans; s. Bengy 33713, d. Colney Forest Queen 52638 by Tatton Friar 21853.  
10 III. (A5).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for Eaton Glen Roy, dark brown; s. Halstead Rob Roy 29449, d. Bidston Beauty 83558 by Normoor Statesman 18286.  
5 E. N.—WILLIAM DUNLOP, Dunure Mains, Ayr, for Lincoln Footprint.  
H. C.—9 C.—7.

#### Class 2.—*Shire Stallions, foaled in 1918.* [10 entries.]

- 17 I. (A15, & Champion.<sup>2</sup>)—JAMES FORSHAW & SONS, Carlton-on-Trent, Newark, for Foch 26559, brown, bred by R. J. Fox, Sibthorpe, Newark; s. Abbotts Royal Blood 5117, d. Shelton Duchess 75902 by Blythwood Kingmaker 18534.  
20 II. (A10).—ROBERT L. MOND, Combo Bank, Sundridge, Sevenoaks, Kent, for Sundridge Nulli Secundus, bay, bred by Allan Holm, The Grange, Tilton; s. Babingley Nulli Secundus 26993, d. Tilton Forest Queen 65180 by Samson 31th 20475.  
18 III. (A5).—WILLIAM DUNLOP, Dunure Mains, Ayr, for Ballam Blend 36267, bay, bred by Matthew Kirkham & Son, The Oaks, Ballam, Lytham; s. Roycroft Forest King 8662, d. Juliet 74937 by Beam Hills Drayman 24549.  
11 E. N.—WILLIAM CRAWFORD, Oakleigh, Higham, Kent, for Goalkeeper of Kent.  
H. C.—19 C.—12, 16, 18.

#### Class 3.—*Shire Stallions, foaled in 1917.* [10 entries.]

- 30 I. (A15, & E. N. for Champion.<sup>2</sup>)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for Burscough Friar 3539, bay, bred by H. & R. Ainscough, Burscough, Ormskirk, Lancs.; s. Claymore 33114, d. Burscough Abbess by Merry Monk 28558.

<sup>1</sup> Prizes given by the Shire Horse Society.

<sup>2</sup> Champion Gold Medal, and £5 to the Reserve, given by the Shire Horse Society for the best Stallion in Classes 1 to 3. A Prize of £5 is also given by the Shire Horse Society to the Breeder of the Champion Stallion, provided the Breeder is a Member of the Shire Horse Society, and the Dam of the animal is registered in the Shire Horse Stud Book.

# 1 Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 22 II. (£10).—JAMES FORSHAW & SONS, Carlton-on-Trent, Newark, for Carlton Friar Tuck, brown, bred by F. W. Abbottson, Langwith, Mansfield; s. Friar Tuck 4th 31447, d. Barn Flash 65704 by Sergeant 8th 16389.  
 23 III. (£25).—H. & R. AINSOUGH, Burscough, Ormskirk, Lancs., for Burscough Iron-clad, brown; s. Claymore 33114, d. Burscough Britannia 73612 by Admiral Bosco 29068.  
 24 R.N.—GEORGE WATERHOUSE, The Grange, Bothamsall, Retford, for Victor's Commander.  
 H.C.—25, 26.

## Class 4.—Shire Fillies, foaled in 1919.<sup>1</sup> [5 entries.]

- 34 I. (£20).—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, Kent, for Princess Childwick of Sundridge, bay; s. Childwick Champion 2215, d. Farewell Tolworth 61946 by King of Tanbridge 24351.  
 35 II. (£10).—WILLIAM DUNLOP, Dunure Mains, Ayr, for Pendley Vanity, bay, bred by J. G. Williams, Pendley Manor, Tring; s. Champion's Goalkeeper 30290, d. Pendley Duchess 86010 by Norbury Menestrel 25541.  
 36 III. (£25).—A. H. CLARK & SON, Moulton Eaughta, Spalding, for Moulton Whitesocks, bay; s. Warton Draughtsman 2885, d. Tatton Duchess 62062 by Tatton Dray King 23777.

## Class 5.—Shire Fillies, foaled in 1918. [4 entries.]

- 38 I. (£15, & Champion.2)—HIS MAJESTY THE KING, Sandringham, for Maid Marion 2nd 99084, brown; s. Friar Tuck 4th 31447, d. Princess 68243 by Resistance 24561.  
 39 II. (£10).—OWEN WILLIAMS, Crossways, Cowbridge, Glamorganshire, for Crossways Forest Maid, bay, bred by F. Farnsworth & Sons, Shawwell, Cirencester; s. Friar Tuck 4th 31447, d. Brockhall Primrose 47343 by Lockinge Forest King 18867.  
 40 III. (£25).—CRAWSHAW & WARBURTON, LTD., Ridings Colliery, Dewsbury, for Elurton Venture 90893, bay, bred by W. H. Hollcroft, Church Farm, Alderley, Market Drayton; s. Marden Forest King 26534, d. Lilleshall Lady Redlynch 75965 by Redlynch Forest King 23628.

## Class 6.—Shire Fillies, foaled in 1917. [5 entries.]

- 42 I. (£15, & R. N. for Champion.3)—G. R. C. FOSTER, Anstey Hall, Trumpington, Cambridge, for Lincoln Duchess 94966, bay, bred by E. T. Rutter, Salmonby, Horncastle, Lincs.; s. Ashtenden King 31163, d. Daisy by Financier King 33199.  
 43 II. (£10).—OWEN WILLIAMS, Crossways, Cowbridge, Glam., for Edgote Whitesocks, 92808, bay, bred by Edgote Shorthorn Company, Ltd., Edgote, Banbury; s. Normanby Jesse 23675, d. Horning Whitesocks 71187 by Woodreeve 24772.  
 44 III. (£25).—W. CRAWFORD, M.R.C.V.S., 155, Woodhouse Lane, Leeds, for Deepstone Ross 92538, bay; s. Eaton Fenland King 32333, d. Old Hough Cornflower 79069 by Pendley Forest Prince 29715.  
 45 R. N.—THE HON. G. BECKETT, M.P., Kirkdale Manor, Newton, SO, York, for Kirkdale Queen Bess.

## Class 7.—Shire Mares, foaled in or after 1916, with Foals at foot.

[5 entries.]

- 45 I. (£15).—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for Harlow Rose 93470, bay, foaled in 1916, bred by H. A. Garton, Hatfield Heath, Essex; s. Coleshill, Forester 24149, d. Princess Rose 79238 by Severn Champion 27759. [Foal by Crosscomer Prince Forester 33858.]  
 46 II. (£10).—GEORGE FLINTHAM, The Grange, Metheringham, Lincoln, for Normandy Mona 94665, bay, foaled in 1917, bred by Sir Berkeley Sh. Field, Bt., Normanby Park; s. Normanby Briar King 32672, d. Cippenhurn Monica 73442 by Dowsby Forest King 27253. [Foal by Childwick Champion 2215.]  
 47 III. (£25).—E. C. FAIRWEATHER, Aistord Park, Arundel, Sussex, for Edgote Lady Betty 92808, bay, foaled in 1908, bred by Edgote Shorthorn Company, Ltd., Edgote, Banbury; s. Childwick Champion 2215, d. Blackthorn Betty 73496 by Halstead Blue Blood 27397. [Foal by Boro Draughtsman 34567.]  
 48 R. N.—ERNEST W. HEADINGTON, Cippenhurn Court, Slough, Bucks, for Fenny Menestrel Dolly.

## Class 8.—Shire Mares, foaled in or before 1915, with Foals at foot.

[5 entries.]

- 50 I. (£15).—A. H. CLARK & SON, Moulton Eaughta, Spalding, for Moulton Victor's Queen 62339, bay, foaled in 1914; s. Moulton Victor King 28860, d. Moulton Lady Grand 36701 by Ethelwulf 16667. [Foal by Moulton Abbott 35902]

<sup>1</sup> Prizes given by the Shire Horse Society.

<sup>2</sup> Champion Gold Medal, and 43 to the Reserve, given by the Shire Horse Society for the best Mare or Filly in Classes 4 to 8. A Prize of 25 is also given by the Shire Horse Society to the Breeder of the Champion Mare or Filly, provided the Breeder is a Member of the Shire Horse Society, and the Dam of the animal is registered in the Shire Horse Stud Book.

## Award of Live Stock Prizes at Darlington, 1920. li

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 51 II. (£10).—MAJOR DAVID DAVIES, M.P. Broneirion, Llandinam, Mont. for Gleadthorpe Seclusion 84986, bay, foaled in 1915, bred by Exors. of Tom Kay, Hatfield House, Cuckney, Mansfield; s. Childwick Champion 22215, d. Bardon May Queen 40043 by Lockinge Forest King 18807. [Foal by Norbury Menestrel 23513.]
- 54 III. (£5).—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for *Billingford Rhapsody* 83865 black, foaled in 1914, bred by R. Hudson, Billingford, Norfolk; s. Babingley Forest King 2492, d. Billingford Symphony 65886 by Calwich Blend 1723. [Foal by Champion's Goalkeeper 30293.]

### Class 9.—*Shire Colt Foals, the produce of Mares entered in Classes 7 or 8.* [4 entries.]

- 56 I. (£10).—ERNEST W. HIRADINGTON, Cippenham Court, Slough, Bucks, for Cippenham Friar, bay, foaled March 16; s. Monks Green Friar 35831, d. Penny Menestrel Dolly 86531 by Norbury Menestrel 23513.
- 58 II. (£5).—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for *Goalkeeper's Forest King*, brown, foaled March 28; s. Champion's Goalkeeper 30293, d. *Billingford Rhapsody* 83865 by Babingley Forest King 26492.
- 55 III. (£3).—MAJOR DAVID DAVIES, M.P. Broneirion, Llandinam, Mont., for bay, foaled May 25; s. Norbury Menestrel 23513, d. Gleadthorpe Seclusion 84986 by Childwick Champion 22215.

### Class 10.—*Shire Filly Foals, the produce of Mares entered in Classes 7 or 8.* [4 entries.]

- 63 I. (£10).—GEORGE FLINTHAM, The Grange, Metheringham, Lincoln, for bay, foaled March 17; s. Childwick Champion 22215, d. Normanby Mona 94865 by Normandy Briar King 32612.
- 59 II. (£5).—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for bay, foaled April 30; s. Crossmoor Prince Forester 33838, d. Harlow Rose 93476 by Colleshill Forester 24143.
- 60 III. (£3).—A. H. CLARK & SON, Moulton Fawcote, Spalding, for bay, foaled May 9; s. Moulton Abbott 35902, d. Moulton Victor's Queen 82339 by Moulton Victor King 28690.

### Class 11.—*Shire Geldings by Registered Sires, foaled in or before 1917.* [3 entries.]

- 61 I. (£15).—GILBERT LEES HARDCASTLE, Long Knowle, Prestwich, Manchester, for Comrade, dark brown, foaled in 1916, bred by W. T. Cocking, Elmtown Grange, Chesterfield; s. Lanes King 30607, d. Darluds Star by Bury Blue Blood 17219.
- 64 II. (£10).—SAMUEL LEGGATE, Dogdyke, Lincoln, for *Dogdyke Premier*, chestnut, foaled in 1916, bred by J. & J. W. Bee, Sedgebrook, Gruntham; s. Ratcliffe Premier 29775, d. Sedgebrook Buttercup 75836 by Southgate Honest Tom 16364.
- 65 III. (£5).—EDMUND PARKER, Ledston Mill, Castleford, Yorks, for *Prince*, bay, foaled in 1913, bred by E. Stoker, Towton, Tadcaster; s. Castleford Royal 21120.

## Clydesdales.\*

### Class 12.—*Clydesdale Stallions, foaled in 1919.* [8 entries.]

- 69 I. (£15, & R.N. for Champion.)—JAMES KILPATRICK, Craigie Mains, Kilmarnock, for Craigie Insignia, bay, bred by James Symington, Kerspark, Hollybush; s. Craigie Lighthouse 19071, d. Neil of Kerse 41168 by Montrave Mariner 17393.
- 63 II. (£10).—JAMES GRAY, Birkenwood, Gargunnoch, Kippen Station, for Vim, brown; s. Botha 19028, d. Meta 45325 by Apukwa 14567.
- 66 III. (£5).—CHARLES AITKENHEAD, Carr House Farm, New Seaham, for black, bred by R. J. Ebdon, Elford, Chathill, Northumberland; s. Dunure Footprint 16203, d. Lady Mary by Scotland's Favourite 16808.
- 72 R.N.—H. E. ROBERTS, Monk Castle, Southwaite, Carlisle, for bay.  
H.C.—70. C.—73.

### Class 13.—*Clydesdale Stallions, foaled in 1918.* [7 entries.]

- 79 I. (£15, & Champion.)—ANDREW M. MONTGOMERY, Nether Hall, Castle Douglas, for Fyris Sensation 20012, bay, bred by J. & P. Donald, Lethen, Fyvie; s. \* Hiawatha Again 19765, d. Lady Ivo 40773 by Dunure Footprint 15203.
- 74 II. (£10).—JAMES GRAY, Birkenwood, Gargunnoch, Kippen Station, for Risqua, bay; s. Apukwa 14567, d. Molly of Birkenwood 41028 by Bonnie Buchlyvie 14032.
- 76 III. (£5).—JAMES HAMILTON, Dunduff, Dunure, Ayr, for *Dunure Flowerman* 20007, bay, bred by John Kerr, Barney Mains, Haddington; s. Auchendower 13007, d. Daisy of Drumbrag 30261 by Dunure James 13452.
- 80 R.N.—THOMAS PETCH, Grange Farm, Great Ayton, Yorks., for Sir Ayton.

\* Prizes given by the Shire Horse Society.

\* £20 towards these Prizes were given by the Clydesdale Horse Society.

\* Champion Prize of £10 given by the Clydesdale Horse Society for the best Stallion in Classes 12-15.

lii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor.]"

**Class 14.—Clydesdale Stallions, foaled in 1917. [8 entries.]**

- 86 I. (£15).—ANDREW M. MONTGOMERY, Nether Hall, Castle Douglas, for Utility 16763, bay, bred by W. Reith, Kennerly, Peterculter, Aberdeenshire; s. Auchensflower 12007, d. Lady Index 41817 by Dunure Index 15203.<sup>1</sup>
- 88 II. (£10).—ALBERT WRIGHTMAN, Middle Herrington Farm, Sunderland, for Herrington Philemore 2062, black; s. Philippine 18044, d. Lady Madge 32255 by Marnion 1428.
- 85 III. (£5).—ROBERT B. LITTLE, Cumdivock House, Dalston, Carlisle, for Fyvie Masterpiece 20040, black, bred by James Durno, Rothiebristane, Fyvie; s. Kismet 18417, d. Chief Darling 32577 by Hillhead Chief 10774.
- 81 E.N.—WILLIAM GRICE, Old Hyton, Bootle, Cumberland, for Hyton Lotharis.

**Class 15.—Clydesdale Stallions, foaled in or before 1916. [6 entries.]**

- 89 I. (£15).—JAMES KILPATRICK, Craigie Mains, Kilmarnock, for Blackwood 1882, black, foaled in 1914, bred by J. & H. R. McConachie, Carswellloch, Creetown; s. Silver Inch 1494, d. Cree Merry Maid 22787 by Benedict 10315.
- 91 II. (£10).—A. B. MATTHEWS, Newton Stewart, for President Wilson 16521, brown, foaled in 1916; s. Apukwa 14567, d. May Day 41529 by The Dunure 16839.
- 90 III. (£5).—ROBERT B. LITTLE, Cumdivock House, Dalston, Carlisle, for Scotchiah Prestige 19566, dark brown, foaled in 1916, bred by James Durno, Rothiebristane, Fyvie; s. Balcarnis Fortune 17078, d. Bess Allandale 32578 by Allandale 12418.

**Class 16.—Clydesdale Fillies, foaled in 1919. [12 entries.]**

- 106 I. (£15).—ROBERT YOUNG, Parkhall, Polmont, Stirlingshire, for Perfect Lady, dark brown; s. Royal Favourite 10633, d. Parkhall Lady Footprint 4434 by Dunure Footprint 15203.
- 95 II. (£10).—F. CALVERT BUTLER & F. J. DICKENS, Red Court, Carnforth, for Farleton Harmony, bay; s. Dunure Footprint 15203, d. Dunure Voice 38671 by Apukwa 14567.
- 100 III. (£5).—STEPHEN MITCHELL, Boquhan, Kippen Station, Stirlingshire, for Boquhan Electra, brown; s. Apukwa 14567, d. Boquhan Heather 43548 by Baron of Buchlyvie 11263.
- 99 IV. (£3).—STEPHEN MITCHELL, for Boquhan Delia, light brown; s. Apukwa 14567, d. Gem of Boquhan 26937 by Baron's Pride 9122.
- 102 E.N.—JOHN THOMAS OLIPHANT, Grimsdale, Carlisle, for Duchess of Grimsdale, C.—103.

**Class 17.—Clydesdale Fillies, foaled in 1918. [12 entries.]**

- 109 I. (£15 & Champion).—JAMES GRAY, Birkenwood, Gargunnoch, Kippen Station, for Peace, brown; s. Botha 18024, d. Joan 41027 by Apukwa 14567.
- 111 II. (£10).—J. E. KERN, Harviestoun Castle, Dollar, for Harviestoun Felicia, bay; s. Dunure Footprint 15203, d. Harviestoun Floraline by Royal Favourite 10630.
- 113 III. (£5).—STEPHEN MITCHELL, Boquhan, Kippen Station, for Boquhan Elsie, brown; s. Botha 18026, d. Boquhan Sheila 43664 by Apukwa 14567.
- 107 E.N.—CHARLES ATKENHEAD, Carr House Farm, New Seaham, for Willow Queen, H.O. 118.

**Class 18.—Clydesdale Fillies, foaled in 1917. [12 entries.]**

- 121 I. (£15).—JOSEPH HARPER, Rathillot, Cupar, Fife, for St. Anne, black, bred by D. Douglas, Balcarmey, Dalley; s. Dunure Footprint 15203, d. Lady Douglas by Revelanta 11876.
- 126 II. (£10).—STEPHEN MITCHELL, Boquhan, Kippen Station, for Boquhan Beryl, brown; s. Dunure Footprint 15203, d. Boquhan Sheila 43664 by Apukwa 14567.
- 129 III. (£5).—F. L. WALLACE, Balcurn, Oldmeldrum, Aberdeenshire, for Mirabelle, bay, bred by George Argo, Petty Fyvie; s. Dunure Footprint 15203, d. Dunure Juanita 35255 by Montrave Mac 9908.
- 130 IV. (£3).—F. L. WALLACE, for Princess 2nd of Airliland, bay, bred by Matthew C. Lush, Airliland, Castle Douglas; s. Dunure Footprint 15203, d. Vera of Airliland 41380 by Baron Kelvin 13991.
- 125 E.N.—ROBERT MARSHALL, Mains of Kilmarnock, by Alexandria, Dumbartonshire, for Lochlands Lady Mary.

**Class 19.—Clydesdale Mares, with Foals at foot. [6 entries.]**

- 136 I. (£15, & R.N. for Champion).—D. D. MURRAY, The Dene, Seaham Harbour, for Queen o' the Ring 46008, black, foaled in 1914, bred by A. M. Simpson, White Cross, East Kilbride; s. Dunure Footprint 15203, d. Lady Degree 41958 by High Degree 14703. [Foal by Bonny Buchlyvie 14032.]
- 132 II. (£10).—F. CALVERT BUTLER & F. J. DICKENS, Red Court, Carnforth, for Farleton Essay, bay, foaled in 1917; s. Dunure Footprint 15203, d. Dunure Voice 35731 by Apukwa 14567. [Foal by Ardeudale.]

<sup>1</sup> Champion Prize of £10 given by the Clydesdale Horse Society for the best Mare or Filly in Classes 14-19.

## Award of Live Stock Prizes at Darlington, 1920. liii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 125 III. (£5.)—JAMES GRAY, Birkenwood, Gargunnoch, Kippen Station, for Senga, bay, foaled in 1917; s. Aukwa 14567, d. Molly of Birkenwood 41028 by Bonnie Buchlyvie 14082. (Foal by Botha 18026.)
- 131 R.N.—ROBERT BURTON, Ploughlands, Warcop, Penrith, for Lily O'Ploughlands.

**Class 20.—Clydesdale Geldings, by Registered Sires, foaled in or before 1917.**  
[5 entries.]

- 140 I. (£15.)—SCOTTISH CO-OPERATIVE WHOLESALE SOCIETY, LTD., 95 Morrison Street, Glasgow, for Willie, black, bred by John Cooper, Muchalls; s. Dunedin.
- 141 II. (£10.)—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for Charlie, bay, foaled in 1918, bred by J. Barrie, Samford Farm, Falkirk; s. Kenilworth.
- 137 III. (£5.)—DAVID ADAMS, Auchencraig, Bonhill Road, Dumbarton, for Renwick, bay, foaled in 1918, bred by R. Henwick, Buchley, Bishopbriggs; s. Royal Print 18085, d. Buchley Kate 41230 by Hiawatha 19067.
- 138 R.N.—E. & T. GRIFFITHS, Eamont Bridge, Penrith, for Bronze Medallist.  
C.—139.

### Suffolks.<sup>1</sup>

**Class 21.—Suffolk Stallions, foaled in 1919.** [6 entries.]

- 145 I. (£15.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Gold Chance 4963; s. Morston Gold Guard 4234, d. Smart 7131 by Rendlesham Goldsmith 3045.
- 146 II. (£10.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for Bawdsey Page 4590; s. Bawdsey Varet 4300, d. Bawdsey Madam 6583 by Cooke Napolian 2693.
- 142 III. (£5.)—CAPT. RAYMOND J. CATCHPOLE, Darsham Hall, Suffolk, for Darsham Bellboy 4966, bred by S. Howard, Yoxford; s. Bellman 4153, d. Teitule 6543 by Oliver 8227.
- 144 R. N.—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for Hawstead Peacemaker.  
C.—143.

**Class 22.—Suffolk Stallions, foaled in 1918.** [10 entries.]

- 155 I. (£15.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne Foch 4609, bred by Kenneth M. Clark, Sudbourne Hall; s. Sudbourne Beau-Brocade 4235, d. Sudbourne Becky 8299 by Sudbourne Peter 3955.
- 154 II. (£10.)—THE EARL OF STRADROKE, Henham Hall, Wangford, Suffolk, for Henham Dreadnought 4991; s. Henham Aerolite 4343, d. Matchett 3015 by Cooke Border Minstrel 2261.
- 148 III. (£5.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Godwick Goldstone 4601, bred by G. P. Watkins, Culpho Hall, Ipswich; s. Morston Gold Guard 4234, d. Crystal 8334 by Viking 3741.
- 153 R. N.—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for Sholey Beau.  
H.C.—156. C.—151, 157.

**Class 23.—Suffolk Stallions, foaled in 1917.** [7 entries.]

- 160 I. (£15.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Golden Seal 4742, bred by Mrs. Cranfield, Burstall, Ipswich; s. Morston Gold Guard 4234, d. Morston Mugpie 8392 by Ashmoor Baronet 3942.
- 184 II. (£10.)—W. WOODGATE, Fairfield, Framlingham, Suffolk, for Discovery 4676, bred by Webb & Son (Combs), Ltd., Combs, Stowmarket; s. Angus 4435, d. Deborah 6290 by Bentley War Cry 3028.
- 162 III. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne K 4692, bred by Kenneth M. Clark, Sudbourne Hall; s. Sudbourne Beauchief 4213, d. Sudbourne Tilley 6662 by Sudbourne Arabi 2267.
- 159 R. N.—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for Easton Sheik.

**Class 24.—Suffolk Stallions, foaled in or before 1916.** [9 entries.]

- 170 (£15, & Champion.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Connaught 4590, foaled in 1914, bred by W. H. Allen, Hawkstead Hall, Ipswich; s. Decider 4431, d. Darby 5661 by Warrior 2695.
- 173 II. (£10, & R. N. for Champion.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne Beau Brocade 4235, foaled in 1913, bred by Kenneth M. Clark, Sudbourne Hall; s. Sudbourne Beau-monde 3595, d. Sudbourne Tilley 6662 by Sudbourne Arabi 2267.

<sup>1</sup> £110 towards these Prizes were given by the Suffolk Horse Society.

<sup>2</sup> The "Coronation" Silver Challenge Cup, value £50, given for annual competition by the Suffolk Horse Society for the best Stallion in Classes 21-24.

liv *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

165 III. (£5.)—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for *Sudbourne Artamus* 4573, foaled in 1916, bred by Kenneth M. Clark, Sudbourne Hall, Orford, Suffolk; s. Sudbourne Arabi 3267, d. Sudbourne Queen of Hearts 5507 by Sudbourne Brownie 2886.

166 R. N.—COLCHESTER AND DISTRICT HEAVY HORSE SOCIETY, White Hall, Thorpe-le-Soken, Essex, for *Friston Khedive*. H.C.—169. C.—166.

*Class 25.—Suffolk Fillies, foaled in 1919. [6 entries.]*

175 I. (£15.)—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for *Ashmoor Bessie* 10367; s. Sudbourne Arabi 3309, d. Ashmoor Belle by Taylor's Majestic 3327.  
176 II. (£10.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for *Morston Gold Gleam* 10371; s. Morston Gold Guard 4234, d. Morston Faith 7606 by Rendlesham Goldsmith 3085.

177 III. (£5.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for *Bawdsey Scotia* 10367; s. Earl Gray 4219, d. Cliff Scott 4237 by Bawdsey Harvester 3076.

179 R. N.—A. CARLYLE SMITH, for *Ashmoor Princess*.

*Class 26.—Suffolk Fillies, foaled in 1918. [10 entries.]*

185 I. (£15.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for *Morston Denise* 9446; s. Morston Gold Guard 4234, d. Smart 7131 by Rendlesham Goldsmith 3095.

186 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for *Mignonette* 9726, bred by F. H. Williams, Alderton, Woodbridge; s. Sudbourne Arabi 3309, d. Merry Thought 6841 by Bawdsey Harvester 3076.

187 III. (£5.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for *Bawdsey Queen* 9913; s. Bawdsey Hay 4183, d. Bawdsey Chieftainess 7453 by Bawdsey Laddie 3637.

188 R. N.—STANLEY WARTH, Hintlesham, Ipswich, for *Sprits*.

*Class 27.—Suffolk Fillies, foaled in 1917. [5 entries.]*

191 I. (£15.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for *Bawdsey Hayseed* 9496; s. Bawdsey Hay 4183, d. Cliff Blossom 6189 by Boulge Conqueror 2367.

192 II. (£10.)—SIR CUTHBERT QUILTER, BT., for *Bawdsey Maid Marion* 9503; s. Bawdsey Hay 4183, d. Bawdsey Mary 4910 by Prince Wedgewood 2364.

194 III. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for *Ashmoor Bellona* 9448, bred by A. Carlyle Smith, Sutton Hall, Woodbridge; s. Sudbourne Arabi 3309, d. Ashmoor Belle by Majestic 3327.

195 R. N.—THE EARL OF STRADBROKE, Henham Hall, Wangford, Suffolk, for *Henham Caroline*.

*Class 28.—Suffolk Mares, with Foals at foot. [6 entries.]*

196 I. (£15.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for *Bawdsey Juno* 8911, foaled in 1916; s. Bawdsey Harvest King 3876, d. Sutton Venus 5993 by Hewitts Mars 2434. (Foal by Bawdsey Varlet 4390.)

200 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for *Sudbourne Moonlight* 8924, foaled in 1915, bred by Kenneth M. Clark, Sudbourne Hall; s. Sudbourne Peter 3255, d. Sudbourne Twilight 7219 by Sudbourne Arabi 3307. (Foal by Sudbourne Beau Brocade 4235.)

197 III. (£5.)—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for *Ashmoor Anemone* 8903, foaled in 1916; s. Sudbourne Arabi 3309, d. Violet 5682 by Cooks Ironside 2759. (Foal by Bawdsey Hay 4183.)

198 R. N.—JOSEPH WATSON, for *Sudbourne Armada*. H.C.—195.

*Class 29.—Suffolk Mares, Barren, foaled before 1917. [4 entries.]*

201 I. (£15.)—CAPT. RAYMOND J. CATCHPOLE, Darsham Hall, Suffolk, for *Darsham Duchess* 8906, foaled in 1916; s. Darsham Sheikh 4139, d. Darsham Princess 7509 by Border Menestrel 2287.

204 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for *Bawdsey Cleopatra* 8638, foaled in 1915, bred by Sir Cuthbert Quilter, BT., Bawdsey Manor, Woodbridge; s. Sudbourne Arabi 3267, d. Bawdsey Empress 7017 by Bawdsey Harvester 3076.

202 III. (£5.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for *Morston Mili-cent* 8942, foaled in 1916; s. Morston Gold Guard 4234, d. Bawdsey Sweet Princess 5651 by Cooks Neapolian 2933.

203 R. N.—STANLEY WARTH, Hintlesham, Ipswich, for *Hintlesham Dorothy*.

*Class 30.—Suffolk Foals, the produce of Mares in Class 28. [5 entries.]*

205 I. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for *Filly*, foaled March 16; s. Sudbourne Beau Brocade 4235, d. Sudbourne Armada 8319 by Sudbourne Peter 3255.

## Award of Live Stock Prizes at Darlington, 1920. 1v

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 207 II. (£5).—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for **Ashmoor Aconite**, filly, foaled March 10; s. Bawdsey Hay 4183, d. Ashmoor Anemone 89.3 by Sudbourne Arab 3303.  
 205 III (£3).—E. R. DEBENHAM, Bladen Dairy Farms, Aff Piddle, Dorset, for colt, foaled April 15; s. Sudbourne Pilot 4411, d. Psycho 7895 by Rendlesham Goldsmith 3035.  
 209 E. N.—JOSEPH WATSON, for filly, foaled April 12.

### Percherons.<sup>1</sup>

**Class 31.—Percheron Stallions, of any age, 16·2 hands and over.** [5 entries.]

- 211 I. (£20, & Champion.<sup>2</sup>)—HENRY OVERMAN, Kipton House, Weasenham, Swaffham, for **Misanthropos** 5, grey, foaled in 1912, bred by M. Bourlier, St. Martin d'Esculier Laigh, Montagne l'Orne, France; s. Dognet ex Sapeux 60641, d. Dantone 60322 by Rival 5065.  
 210 II. (£10, & R. N. for Champion.<sup>2</sup>)—HENRY OVERMAN, Brampton Ash, Market Harboro, for **Lagor** 1, grey, foaled in 1911, bred by M. Chapelle, Origny ex Roux, Orne, France; s. Huchoir 77700, d. Gognette 57589 by Ametee.  
 213 III. (£5).—LOUIS STALBRIDGE, Motcombe House, Shaftesbury, for **Noel** 8, grey, foaled in 1913, bred by M. Pelletier, Nogent-le-Rotrou, France; s. Joudi 8571, d. Bertine 67833 by Egyptian 43775.  
 212 E. N.—ROBERT E. PARKER, Easton, Norwich, for **Newport** 20.  
 H.C.—214.

**Class 32.—Percheron Stallions, of any age, under 16·2 hands.** [9 entries.]

- 219 I. (£20).—THOMAS COOK, Hobland House, Bradwell, Great Yarmouth, for **Perfection** 46, grey, foaled in 1917, bred by George Lane, Calgary, Alberta; s. Halifax 75867, d. Esmeralda 2103 by Epatant 63238.  
 223 II. (£10).—ROBERT E. PARKER, Easton, Norwich, for **Paragon** 30, black, foaled in 1917, bred by George Lane, Calgary, Alberta; s. Halifax 75867, d. Alberta 580 by Americain 63422.  
 218 III. (£5).—MRS. T. R. COLVILLE, Maer Hall, Newcastle, Staffs, for **Ortho** 22, iron grey, foaled in 1914, bred in France; s. Kontemporain 91579, d. Kathma 93913 by Grey 71373.  
 216 E. N.—LIEUT.-COL. SIR MERRIK BURRELL, BT., C.B.E., Knepp Castle, West Grinstead, for **Omer**.  
 H.C.—215. C.—220.

**Class 33.—Percheron Mares, with Foals at foot.** [7 entries.]

- 228 I. (£20).—HENRY OVERMAN, Kipton House, Weasenham, Swaffham, for **Niobe** 26, grey, foaled in 1913, bred by M. Perrier La Rouca, Masle Cheele-Haue, Montagne, France; s. Jean Bart 86579, d. Imposée 80406 by Auctonnaire 64675. [Foal by Ombrien 12415.]  
 225 II. (£10).—MRS. ROBERT EMMET, 86, Grosvenor Street, London, W., for **Malaria** 10, grey, foaled in 1912, bred by M. Chartier, Aprees, Mortagne, France; s. Inegal 79874, d. Jaseuse 83965 by Fernand 65262. [Foal by Nonius 4.]  
 224 III. (£5).—LIEUT.-COL. SIR MERRIK BURRELL, BT., C.B.E., Knepp Castle, West Grinstead, for **Falome** 29, grey, foaled in 1915, bred in France; s. Irradie 83254, d. Metree 82573 by Valory 86112. [Foal by Noel 8.]  
 230 E. N.—BRIG.-GEN. C. R. P. WINSER, Dene House, Charlbury, Oxon, and COL. A. DUGDALE, Kitebrook, Moreton-in-Marsh, for **Quonjointe**.  
 H.C.—226, 227.

**Class 34.—Percheron Mares, Barren or Maiden, of any age.** [13 entries.]

- 233 I. (£20).—MRS. ROBERT EMMET, 86 Grosvenor Street, London, W., for **Messaline** 21, grey, foaled in 1912, bred by M. Demange, Blavette, Mortagne, France; s. Douverre ex Couvreux 68336, d. Paquerette 87642 by Voltigeur 44388.  
 232 II. (£10).—THOMAS COOK, Hobland House, Bradwell, Great Yarmouth, for **Marrillon** 59, grey, foaled in 1912, bred in France; s. Ermite 44360, d. Plaquette 41001 by Etendart 32198.  
 241 III. (£5).—ROBERT E. PARKER, Easton, Norwich, for **Nettie** 73, grey, foaled in 1915, bred by George Lane, Calgary, Alberta; s. Halifax 75867, d. Ginguette 7700 by Tiratol 57125.  
 235 E. N.—MRS. ROBERT EMMET, 86 Grosvenor Street, London, W., for **Nemesis** 203, grey, foaled in 1915, bred by M. Brunet, Chatelet, St. Calais, France; s. Javelot 85359, d. Baronne 54305 by Tertois 42511.  
 H.C.—236.

<sup>1</sup> £20 towards these Prizes were given by the British Percheron Horse Society.

<sup>2</sup> Challenge Cup given by the British Percheron Horse Society for the best Percheron Stallion in Classes 31 and 32.



## lvi Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated each prize animal named below was "bred by exhibitor."]

- Class 35.—Percheron Foals, produce of Mares in Class 33.** [7 entries.]  
 248 I. (£15).—HENRY OVERMAN, Kipton House, Wessingham, Swaffham, for grey colt, foaled May 2; s. Ombrien 12415, d. Noble 28 by Jean Bart 86379.  
 249 II. (£10).—MRS. ROBERT EMMET, 66 Grosvenor Street, London, for Greyling Unime 238, grey filly, foaled April 23, s. Nonius 4, d. Malaria 10 by Inegal 7874.  
 244 III. (£5).—LT. COL. SIR MERRIK R. BURRELL, BT., C.B.E., Knepp Castle, West Grinstead, for Knepp Christmas.

### Hunters.<sup>1</sup>

**Class 36.—Hunter Colts or Geldings, foaled in 1919.** [4 entries.]

- 252 I. (£15).—M. A. BULLOWS, Edgbaston Riding School, Barlow Road, Edgbaston, Birmingham, for Stort, bay colt, bred by William Vizard, Hayesden, Tonbridge, Kent; s. Stortford 145, d. Winkle 4543 by Hanover Square.  
 251 II. (£10).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for Harishorn, brown or bay gelding; s. Crathorne (vol. 18, p. 854, G.S.B.), d. Heather 3rd 4196 by Scotch Sign.  
 254 III. (£5).—MOFFAT S. THOMSON, Spotsmain, Kelso, Roxburghshire, for Glad Rags, chestnut colt; s. Jovial, d. Pyramus 5320 by Pantomime.

**Class 37.—Hunter Geldings, foaled in 1918.** [11 entries.]

- 261 I. (£15).—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Nottingham, for Repose, chestnut; s. The Chair, d. Maria by Red Kangaroo.  
 255 II. (£10).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for Whitehorn, chestnut; s. Crathorne (vol. 18, p. 854, G.S.B.), d. Whinflower 3301 by The Hero (vol. 18, p. 83, G.S.B.).  
 263 III. (£5).—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks, for Comrade, brown; s. Cavour, d. Ladylike by Markham.  
 258 IV. (£3).—REX HOWKINS, Clifton Keynes, Newport Pagnell, Bucks, for Coalition (Supp. No. 438), chestnut, bred by Major J. L. Nickisson, Hinton Manor, Swindon; s. Political, d. Sister Anne 3723 by Pantomime.  
 259 R.N.—COL. JEROME, Bilton Hall, York, for Foch.  
 C.—258, 263.

**Class 38.—Hunter Geldings, foaled in 1917.** [11 entries.]

- 276 I. (£15).—FRANK B. WILKINSON, Cavendish Lodge, Edwinstowe, Newark, for Joy, chestnut, bred by W. A. Lockwood, Mount Pleasant, Sheriff Hutton; s. Jovial.  
 266 II. (£10).—W. COCHRAN-CARR, Lower Condercum, Newcastle-on-Tyne, for Red Raider (Supp. No. 447), chestnut; s. Denis Richard, d. Red Gauntlet 5738 by Red Sahib (75).  
 275 III. (£5).—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks, for Lealholm, bay, bred by T. Codling, Lealholm; s. Cavour.  
 267 IV. (£3).—SIR ARTHUR J. DORMAN, K.B.E., Grey Towers, Nunthorpe, Yorks, for Moorste 2nd (Supp. No. 457), brown; s. Blacksmith 192, d. Pinafore 2nd 3455 by Dromonby.  
 269 R.N.—CAPT. W. P. JEFFCOCK, Owmearvan Court, Monmouth, for Chevy Chase.  
 C.—268, 271, 274.

**Class 39.—Hunter Fillies, foaled in 1919.** [7 entries.]

- 282 I. (£15).—MAJOR J. L. NICKISSON, Hinton Manor, Swindon, for Aigrette 5645, chestnut; s. Aiglon, d. Sister Anne 3723 by Pantomime.  
 280 II. (£10).—GEORGE DICKINSON, Carke Mills, Carke-in-Cartmel, Lancs, for Carke Silver Birch, bay, bred by Mr. Kitchen, Beartham; s. Silver Grill, d. Beechurst.  
 279 III. (£5).—MAJOR DAVID DAVIES, M.P., Bronerion, Llandinam, Mont., for Gwyneth, chestnut; s. Ballinasloe 84, d. Lottery.  
 278 R.N.—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for Winnifred.

**Class 40.—Hunter Fillies, foaled in 1918.** [8 entries.]

- 286 I. (£15, & Champion.<sup>2</sup>)—GEORGE DICKINSON, Carke Mills, Carke-in-Cartmel, Lancs, for Carke Silver Pheasant 5725, chestnut; s. Silver Grill, d. Carke Columbine by Underbred.  
 291 II. (£10, & R.N. for Champion.<sup>2</sup>)—MOFFAT S. THOMSON, Spotsmain, Kelso, Roxburghshire, for Flannelette, chestnut; s. Huntly Gowk 186, d. Pyramus 5320 by Pantomime.

<sup>1</sup> £50 towards these Prizes were given by the Hunters' Improvement and National Light Horse Breeding Society.

<sup>2</sup> Champion Gold Medal given by the Hunters' Improvement and National Light Horse Breeding Society for the best Filly not exceeding three years old in Classes 36-41, which must be registered in the Hunter Stud Book, or the entry tendered within a month of the Award.

## Award of Live Stock Prizes at Darlington, 1920. lvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

285 III. (£5).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for *Heroine* 2nd 5701, bay; s. Crathorne (vol. 20, p. 445, G.S.B.), d. *Heather* 3rd 4106 by Scotch Sign.

284 B. N.—L. H. BARKER, The Farm, Contham, Redcar, Yorks., for *Cynthia*. H. C.—280.

**Class 41.—Hunter Fillies, foaled in 1917. [7 entries.]**

285 I. (£15).—GEORGE DICKINSON, Cark Mills, Cark-in-Cartmel, Lancs, for *Cark Victory*, bay brown; s. *Soft Answer*, d. *Cark Columbine* by Underbred.

286 II. (£10).—HAROLD GRAINGER, Boston Spm, Yorks, for *Mercury*, grey; s. *Merry Fox*, d. *Quick-silver* by The Dempster.

284 III. (£5).—W. G. CLARKE, Dobden Hall, Loughton, Essex, for *Viewfinder* 5613, chestnut, bred by the late W. R. Clarke, Dobden Hall, Loughton, Essex; s. *Explorer*, d. *Flash* 2nd 3858.

**Class 42.—Hunter Mares (Novice), foaled in or after 1912, with Foals at foot, up to from 12 to 14 stone. [5 entries.]**

300 I. (£15).—SIR ARTHUR J. DORMAN, K.B.E., Grey Towers, Nunthorpe, Yorks, for *Swift* 5903, bay, foaled in 1914; s. *Tennis Ball* (vol. 21), d. *Lady Bird* 9th 4895. [Foal by Ednam.]

304 II. (£10).—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks, for *Princess*, chestnut, foaled in 1913, bred by Robert Ward, Kopwick. [Foal by Ednam.]

**Class 43.—Hunter Mares (Novice), foaled in or after 1912, with Foals at foot, up to more than 14 stone. [1 entry.]**

305 I. (£15).—WILLIAM H. SHIERS, Needwood House, Burton-on-Trent, for *Clematis* 5794, bay, foaled in 1912, bred by George Marlon, Salton Manor, Sinnington, Yorks; s. *Denis Richard*, d. *Pine Apple* by Peppinster. [Foal by Modubengh.]

**Class 44.—Hunter Mares with Foals at foot, up to from 12 to 14 stone.<sup>1</sup> [10 entries.]**

289 I. (£15).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for *Heather* 3rd 4106, brown, foaled in 1910; s. Scotch Sign, d. *Whinlifer* 3501 by The Hero. [Foal by Fealsham.]

312 II. (£10).—LORD MIDDLETON, Birdsall, Malton, Yorks, for *Sceptre* 3703, brown, foaled in 1909; s. *Ollerton* (vol. 20, p. 182), d. *Scornful* 1208 (vol. 4) by Gordon. [Foal by Sir Harry (vol. 20, p. 791).]

313 III. (£5).—WILLIAM H. SHIERS, Needwood House, Burton-on-Trent, for *Princess Mary* 5755, brown, foaled in 1912, bred by Marcus Kendall, Ness Hall, Nunnington, York; s. *Selby Royal*, d. *Wild Mint* by Peppermint. [Foal by Peter Pan.]

306 B.N.—ERNEST BRADLEY, Newton Grange, Great Ayton, for *Dolly*, chestnut, foaled in 1908; s. *Burnockwater*. [Foal by Ednam.] H.C.—307. O.—310.

**Class 45.—Hunter Mares with Foals at foot, up to more than 14 stone.<sup>1</sup> [2 entries.]**

318 I. (£15, & Champion\*)—GEOFF KENYON, Plumville, Haxby, York, for *Beauty Darling*, grey, foaled in 1910; s. *Butterscotch*. [Foal by Primary].

315 II. (£10, & R.N. for Champion\*)—T. A. HUDSON, Rudding House, Pannal, Harrogate, for *Miss Walton*, bay, aged. [Foal by Cavour.]

**Class 46.—Hunter Colt Foals, the produce of Mares in Classes 42 to 45. [6 entries.]**

321 I. (£10).—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks., for chestnut, foaled May 6; s. Ednam, d. *Princess*.

317 II. (£5).—ERNEST BRADLEY, Newton Grange, Great Ayton, Yorks, for chestnut, foaled May 28; s. Ednam, d. *Dolly* by Burnockwater.

320 III. (£3).—LORD MIDDLETON, Birdsall, Malton, Yorks, for chestnut, foaled May 28; s. *Sir Harry* (vol. 20, p. 791), d. *Sceptre* 3708 by Ollerton (vol. 20, p. 182).

**Class 47.—Hunter Filly Foals, the produce of Mares in Classes 42 to 45. [11 entries.]**

327 I. (£10).—GEOFF KENYON, Plumville, Haxby, York, for grey, foaled April 2; s. *Primary*, d. *Beauty Darling* by *Butterscotch*.

323 II. (£5).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for *Haleyogge*, chestnut, foaled April 16; s. *Fealsham*, d. *Heather* 3rd 4106 by Scotch Sign.

326 III. (£3).—T. A. HUDSON, Rudding House, Pannal, Harrogate, for bay, foaled April 29; s. *Cavour*, d. *Miss Walton*.

325 B. N.—SIR ARTHUR J. DORMAN, K.B.E., Grey Towers, Nunthorpe, Yorks., for bay. <sup>1</sup> Prizes given by the Hunters' Improvement and National Light Horse Breeding Society.

<sup>2</sup> \* Champion Gold Medal given by the Hunters' Improvement and National Light Horse Breeding Society, for the best Mare four years old and upwards in Classes 42-45 which must be registered in the Hunter Stud Book, or the entry tendered within a month of the Award.

## lviii Award of Live Stock Prizes at Darlington, 1920.

(Unless otherwise stated, each prize animal named below was "bred by exhibitor.")

### Polo and Riding Ponies.<sup>1</sup>

**Class 48.**—*Polo and Riding Pony Stallions, foaled in or before 1917, not exceeding 15 hands.* [6 entries.]

- 339 I. (£10. & R.N. for Champion.<sup>2</sup>)—HUMPHREY R. PELL, Lyndsays Farm, Ingatestone, Essex, for Aviator 853, chestnut, foaled in 1913, bred by Miss S. Corbett, Stableford, Bridgnorth; s. Champion White Wings 461, d. Telegram 2341.  
 337 II. (£5.)—MRS. W. L. BEAL, East Hailsey, Northallerton, Yorks., for Basuto Chief 854 brown, foaled in 1913; s. Fairburn 1086, d. Whitface 2957.  
 336 III. (£3.)—JAMES BROWN, 19 Newbottle Street, Houghton-le-Spring, Co. Durham, for Toby, bay or brown, foaled in 1909; s. Be Very Wise, d. Jane by Prince Otto or King Otto.  
 334 E. N.—DENIS ALDRIDGE, Sketchley Hall Farm, Hinckley, for Sahara.

**Class 49.**—*Polo and Riding Pony Colts, Fillies or Geldings, foaled in 1919.* [6 entries.]

- 343 I. (£10.)—G. NORRIS MIDWOOD, The Grange, North Rode, Congleton, for Shillalagh (Supp. 1919), chestnut colt; s. Little Corona 814, d. Sligo 2nd 2834.  
 340 II. (£5.)—MAJOR H. FAUDEL-PHILLIPS, Moor Hall Stud, Cookham, Berks., for Post Bellum (Supp. 1919), chestnut filly; s. Stortford, d. Tarantella by Turgol.  
 341 III. (£3.)—TRESHAM GILBEY, Whitehall, Bishops Stortford, Herts., for Scooter, (Supp. 1920), bay colt; s. Goodward 948, d. Skedaddle.  
 345 E. N.—C. HOWARD TAYLOR, Middlewood Hall, Barnsley, for Goody-two-Shoes.

**Class 50.**—*Polo and Riding Pony Colts, Fillies or Geldings, foaled in 1918.* [4 entries.]

- 347 I. (£10. & Champion.<sup>2</sup>)—G. NORRIS MIDWOOD, The Grange, North Rode, Congleton, for The Marne (Supp. 1918), chestnut colt; s. Little Corona 814, d. Sligo 2nd 2834.  
 343 II. (£5. & R. N. for Champion.<sup>3</sup>)—TRESHAM GILBEY, Whitehall, Bishops Stortford, Herts., for Morning Glow, bay filly; s. Prairie Fire, d. Coming Dawn by Mark Forard.  
 349 III. (£3.)—C. HOWARD TAYLOR, Middlewood Hall, Barnsley, for Perfection 2nd (Supp. 1918), chestnut filly; s. Favourite 768, d. Quinceolara 2166 by Marchal Nel 363.  
 346 E. N.—DENIS ALDRIDGE, Sketchley Hall Farm, Hinckley, for Oasis.

**Class 51.**—*Polo and Riding Pony Fillies or Geldings, foaled in 1917.* [6 entries.]

- 364 I. (£10. & Champion.<sup>3</sup>)—TRESHAM GILBEY, Whitehall, Bishop's Stortford for Rackette (Supp. 1919) bay filly; s. Rack Rent, d. St. Kilda.  
 353 II. (£3.)—CAPT. W. H. FRANCE-HAYHURST, Rostock Hall, Middlewich, Cheshire, for Sammel (vol. 16), brown gelding; s. Chief Butler 665, d. Juliet 2nd (Supp. 1912) by Sandway.  
 355 III. (£3.)—MAJOR H. A. WERNHER, Someries House, Regent's Park, London, N.W.1., for Ikon, brown gelding; s. Thruster, d. Fusee.  
 331 E. N.—C. C. ELLISON, Huttons Ambo Hall, York, for The Baronet.

**Class 52.**—*Polo and Riding Pony Mares, with Foals at foot, not exceeding 14.2 hands.* [2 entries.]

- 356 (£10.)—GEOFF KENTON, Plainville, Haxby, York, for Toodie, brown, foaled in 1910. [Foal by Primary.]  
 357 (£5. & B.M.<sup>4</sup>)—MAJOR H. A. WERNHER, Someries House, Regent's Park, London, N.W.1., for Iceeae, black, foaled about 1906. [Foal by Thruster.]

### Arabs.<sup>5</sup>

**Class 53.**—*Arab Stallions, any age.* [6 entries.]

- 362 I. (£10.)—S. G. HOUGH, Springhouse Park, Theydon Bois, Epping, Essex, for Nureddin 2nd (vol. 1), chestnut, foaled in 1911, bred by W. S. Blunt, Newbuildings Place, Southwater, Sussex; s. Rijm, d. Nargilch by Mesaoud.

<sup>1</sup> £25 towards these Prizes were given by the National Pony Society.

<sup>2</sup> Champion Gold Medal given by the National Pony Society for the best Colt or Stallion in Classes 48-50.

<sup>3</sup> Champion Gold Medal given by the National Pony Society for the best Mare or Filly in Classes 49-52.

<sup>4</sup> Bronze Medal given by the National Pony Society for the best Foal in Class 52 entered or eligible for entry in the Supplement to the National Pony Stud Book.

<sup>5</sup> £15 towards these Prizes were given by the Arab Horse Society.

## Award of Live Stock Prizes at Darlington, 1920. lii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 360 II. (£5.)—L. EDMUNDS, Cholderton, Salisbury, for *Shahyuda*, grey, foaled in 1913, bred by the late H. C. Stephens, Cholderton; s. Mootrub, d. Ruth Kasia by Ben Azrek.
- 353 III. (£3.)—H. V. MUSGRAVE CLARK, White Hart Hotel, Lewes, Sussex, for *Mustapha Kamel* (vol. 1), bay, foaled in 1906, bred by Lady Anne Blunt, Crabbett Park, Sussex; s. Feysul, d. Mabsuta by Mesoud.
- 363 R. N.—HUGH F. MACLACHLAN, Woodend, Styal, Cheshire, for *Raml*.

### Class 54.—Arab Mares, with Foals at foot. [5 entries.]

- 356 I. (£10.)—S. G. HOUGH, Springhouse Park, Theydon Bois, Epping, Essex, for *Ruth Kasia* (vol. 1), flea bitten grey, foaled 1903, bred by the late H. C. Stephens, Cholderton, Wilts; s. Ben Azrek, d. Borak by Boumerges. [Foal by Mueddin 2nd, vol. 1.]
- 365 II. (£5.)—H. V. MUSGRAVE CLARK, White Hart Hotel, Lewes, Sussex, for *Nessima* (vol. 1), bay, foaled in 1908, bred by Lady Anne Blunt, Crabbett Park, Sussex; s. Rjhm, d. Nargileh by Mesoud. [Foal by Skovronek.]
- 364 III. (£3.)—H. V. MUSGRAVE CLARK, for *Feluka* (vol. 1), chestnut, foaled in 1899, bred by Lady Anne Blunt, Crabbett Park, Sussex; s. Mesoud, d. Ferida. [Foal by Skovronek, vol. 1.]
- 367 R. N.—S. G. HOUGH, for *Sheeba*.

## Cleveland Bays.<sup>1</sup>

### Class 55.—Cleveland Bay Stallions, foaled in 1917 or 1918. [1 entry.]

- 369 I. (£10, & R. N. for Champion.<sup>2</sup>)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks, for *Toft House Lad* 1739, bay, foaled in 1917, bred by George Elders, Toft House, Aislaby; s. Aislaby Lad 1723, d. Woodland Starlight 1328 by Woodland Pride 1659.

### Class 56.—Cleveland Bay Stallions, foaled in or before 1916.

[5 entries.]

- 370 I. (£10, & Champion.<sup>2</sup>)—HIS MAJESTY THE KING, Royal Mews, Buckingham Palace, London, S.W. 1, for *Beadlam Brisco* 1734, foaled in 1914, bred by George Scooby, Beadlam Grange, Newton; s. King George 5th 1716, d. Daisy 1356 by Leveret 1531.
- 374 II. (£5.)—JOHN WELFORD, Grange Farm, Loftus, Yorks., for *Grange Lad* 1744, foaled in 1916; s. Aislaby Lad 1723 d. Lady Steinthorpe 718 by Lord Hillington 896.
- 371 III. (£3.)—CLEVELAND BAY HORSE SOCIETY, Grove House, Norton, Stockton-on-Tees, for *Charmer* 1757, foaled in 1913, bred by John Hill, Nipehowe, Hawsker, Whitby; s. Cholderton Luck 1712, d. Barnby Star 1540 by Rosedale 1692.
- H. C.—372, 373.

### Class 57.—Cleveland Bay Fillies, foaled in 1917 or 1918.

[3 entries.]

- 377 I. (£10, & Champion.<sup>3</sup>)—JOHN WELFORD, Grange Farm, Loftus, Yorks., for *Grange Delight* 1400, foaled in 1918; s. Loftus Favourite 1723, d. Maid of Loftus 1734 by Pitch and Toss 1204.
- 375 II. (£5.)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks., for *Hawthorn Rose* 1363, foaled in 1917, bred by George Elders, Toft House, Aislaby, Sleights; s. Aislaby Lad 1722, d. Aislaby Starlight 1388 by Aislaby Pride 1697.

### Class 58.—Cleveland Bay Mares, with Foals at foot. [5 entries.]

- 381 I. (£10, & R. N. for Champion.<sup>3</sup>)—E. LLOYD PEASE, Hurworth Moor, Darlington, for *The Witch* 1322, foaled in 1908; s. Pottio Hutton 1603, d. Horsfalls Darling 532 by Fidino Dins 107. [Foal by Beadlam Brisco 1734.]
- 379 II. (£5.)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks., for *Aislaby Starlight* 1338, foaled in 1908, bred by George Elders, Toft House, Aislaby, Sleights; s. Aislaby Pride 1697, d. Hawthorn Darling 1294 by King Fred 1523. [Foal by Aislaby Lad 1723.]
- 380 III. (£3.)—O. S. FISHBURN, Thorpe Thewles, Ferryhill, Co. Durham, for *Norton Britannia* 1578, foaled in 1915, bred by W. Fletcher, Norton-on-Tees; s. Aislaby Lad 1722, d. Ingley Rose 1285 by Ingley Marquis. [Foal by Beadlam Brisco.]

<sup>1</sup> £20 towards these Prizes were given by the Cleveland Bay Horse Society.

<sup>2</sup> Champion Prize of £5 given by the Cleveland Bay Horse Society for the best Stallion in Classes 55 and 56.

<sup>3</sup> Champion Prize of £5 given by the Cleveland Bay Horse Society for the best Mare or Filly in Classes 57 and 58.

# lx Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

## Yorkshire Coach Horses.<sup>1</sup>

Class 59.—*Yorkshire Coach Horse Stallions, foaled in 1917 or 1918.*

[3 entries.]

- 383 I. (£10, & Champion.<sup>2</sup>)—WILLIAM GRAYSON, Normanby House, Pickering, Yorks., for Priory Monk 28 9, foaled in 1917, bred by Robinson Bros., Priory Farm, Grosmont; s. Aislaby Lad 2542, d. Priory Hilda 1915 by King George 5th 1718.  
385 II. (£5.)—WILLIAM GRAYSON, for The Wake 2408, foaled in 1917, bred by Winesap Bros., Aislaby Sleights; s. Aislaby Lad 2542, d. Woodlands May 1223 by Breaston Prince 2451.

Class 60.—*Yorkshire Coach Horse Stallions, foaled in or before 1916.*

[5 entries.]

- 386 I. (£10, & R. N. for Champion.<sup>3</sup>)—H.M. THE KING, Royal Mews, Buckingham Palace, London, S.W. 1, for Tantalus 2544, foaled in 1911, bred by Dobson Coates, Eastgate, Pickering; s. Breaston Prince 2451, d. Violet 1189 by Lord Chief Justice 1244.  
388 II. (£5.)—JOHN LETT, Rillington, York, for Rillington Victor 2536, foaled in 1910, bred by the late William Wood, Biladale, York; s. Breaston Prince 2451, d. Queen's Rocket 948 by Prince of the Dales.  
387 III. (£3.)—FRANCIS HENRY CARR, Kexby House, Kexby Bridge, Yorks., for Kexby Majesty 2577, foaled in 1914; s. King George 5th 1718, d. Queen Mary 1179 by Breaston Prince 2451.  
H. C.—389.

Class 61.—*Yorkshire Coach Horse Fillies, foaled in 1917 or 1918.* [3 entries.]

- 392 I. (£10, & R. N. for Champion.<sup>3</sup>)—WILLIAM GRAYSON, Normanby House, Pickering, York, s. for Glouesk 1314, foaled in 1917, bred by James Ward, Bird Farm, Grosmont; s. Aislaby Lad 2542, d. Fanny 1310 by McNeil's Barnaby 1832.  
391 II. (£5.)—FRANCIS HENRY CARR, Kexby House, Kexby Bridge, Yorks., for Lady Mary, foaled in 1918; s. Kexby Majesty, d. Yorkshire Princess 1203 by Breaston Prince 2451.

Class 62.—*Yorkshire Coach Horse Mares, with Foals at foot.* [3 entries.]

- 395 I. (£10, & Champion.<sup>3</sup>)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks., for Aislaby Rose 1280, foaled in 1915, bred by George Elders, Toft House, Aislaby Sleights; s. Aislaby Lad 2542, d. Aislaby Starlight 1172 by Aislaby Prince 2463. [Foal by Grange Hero 1742.]  
394 II. (£5.)—FRANCIS HENRY CARR, Kexby House, Kexby Bridge, Yorks., for Yorkshire Princess 1200, foaled in 1911; s. Breaston Prince 2451, d. Lady Carlisle 1057 by Primrose Carlisle 2325. [Foal by Kexby Majesty 2577.]  
396 III. (£3.)—J. W. LETT, Scougletorp Manor, Malton, Yorks., for Rillington Victory, foaled in 1912, bred by John Lett, Rillington; s. Chadderton Luck 2317, d. Rillington Attraction 1148 by Special Delight 2380. [Foal by Rillington Victor 2330.]

## Hackneys.<sup>4</sup>

Class 63.—*Hackney Stallions, foaled in 1918.* [6 entries.]

- 401 I. (£10.)—J. F. RUSHWORTH, Eskdale, Barga, Grimsby, for Carleton Gay Fashion 1347, dark chestnut, bred by W. J. Tennant, Carleton, Pontefract; s. Carleton Quality 12565, d. Maroie Lady 18406 by Royal Danegelt 5785.  
398 II. (£5.)—HERBERT JONES, Eytounhurst, Rhyl, for Huntington Merrylegs 18406, dark chestnut; s. Salford Victor 12018, d. Huntington Topsey 19098 by Rowton Merrylegs 8853.  
399 III. (£3.)—C. P. KENTON, Steele, Whitechurch, Salop, for Vanus Grand Fashion, bay, bred by T. P. Flower, Leicester; s. Mathias 6473, d. Westfield Surprise 21744 by Paddock Polonius 7208.  
387 E. N.—JOHN CHARLES HILLS, Marsh Farm, Runham, Great Yarmouth, for Interpreter.  
H. C.—402.

Class 64.—*Hackney Stallions, foaled in or before 1917, over 14 and not exceeding 15 2 hands.* [9 entries.]

- 405 I. (£10, & R. N. for Champion.<sup>5</sup>)—WILLIAM GREENWOOD, Gledhow Hall Farm, Roundhay, Leeds, for Airedale Proctor 13360, chestnut; s. King's Proctor 11102, d. Belle Mere 21237 by Polonius 4911.

<sup>1</sup> £20 towards these Prizes were given by the Yorkshire Coach Horse Society.

<sup>2</sup> Champion Prize of £5 given by the Yorkshire Coach Horse Society for the best Stallion in Classes 59 and 60.

<sup>3</sup> Champion Prize of £5 given by the Yorkshire Coach Horse Society for the best Mare or Filly in Classes 61 and 62.

<sup>4</sup> £20 towards the Prizes for Hackneys and Hackney Ponies were given by the Hackney Horse Society.

<sup>5</sup> Champion Gold Medal, given by the Hackney Horse Society, for the best Stallion in Classes 63-65.

## Award of Live Stock Prizes at Darlington, 1920. lxi

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 406 II. (£5.)—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for Salford Victor 12918, chestnut, foaled in 1914; s. Hopwood Viceroy 9280, d. Knowle Hailma 13633 by His Majesty 2513.  
 410 III. (£3.)—J. E. HUSHWORTH, Eckdale, Barge, Grimsby, for Carleton Quality 12395, dark chestnut, foaled in 1913, bred by W. J. Tennant, Carleton, Pontefract; s. Hopwood Viceroy 9280, d. Marole 14542 by Connaught 1453.  
 403 B. N.—DR. HOWARD S. CHAVASSE, 56 High Street, Sutton Coldfield, Birmingham, for Tudor Emperor.  
 H. C.—409.

Class 65.—*Hackney Stallions, foaled in or before 1917, over 15·2 hands.*  
 [4 entries.]

- 413 I. (£10, & Champion.<sup>1</sup>)—H. EINRICHSSEN, Grotto House, Higher Peover, Knutsford, Cheshire, for Bertrano 13288, chestnut, foaled in 1917; s. King's Proctor, 11102, d. Ophelia's Daughter Grace 19479 by Royal Danegelt 5785.  
 412 II. (£5.)—MRS. FLETCHER & SONS, The Grange, Angram, York, for Angram Champion 13301, chestnut, foaled in 1917, bred by the Exors. of the late C. Mitchell, Enthorpe House Middleton-on-the-Wolds; s. Angram Majesty 11967, d. Enthorpe Vanity 19057 by His Majesty 2513.  
 414 III. (£3.)—C. F. KENYON, Steele, Whitechurch, Salop, for Cudham Leader 13476, chestnut, foaled in 1917, bred by F. J. Stephenson, Wandale Farm, Bridlington; s. Kirkburn Leader 12975, d. Lady Elms 13217 by The Marquis 6122.  
 H. C.—415.

Class 66.—*Hackney Fillies or Geldings, foaled in 1918.* [6 entries.]

- 420 I. (£10.)—A. E. ROBERTS, Hollin House, Court Road, Tunbridge Wells, Kent, for Queen of the Movies 247·2, dark chestnut filly, bred by A. Basil Kennington, Haverbrack, Uckfield, Sussex; s. Garston Proctor 12843, d. Garston Leopardess 22009 by Leopard 9785.  
 416 II. (£5.)—C. EDWARD E. COOKE, Manor House, Bygrave, Baldock, Herts, for Bygrave Marguerite 25016, bay filly; s. Leopard 9785, d. Primrose Path 11400 by Lord Denby 2nd 3092.  
 419 III. (£3.)—FRANK LLOYD, Eyton House, Wrexham, for Danum Meadow Sweet, chestnut filly, bred by Ernest Bewley, Danum, Rathgar, co. Dublin; s. Mathias 6473, d. Woodhatch Sunflower 22307 by Polonius 4831.  
 418 B. N.—ENOCH GLEN, Kaim Park, Bathgate, Scotland, for Victory Bonds.  
 H. C.—417.

Class 67.—*Hackney Fillies or Geldings, foaled in 1917.* [4 entries.]

- 424 I. (£10.)—HUBERT GROOM, Sunderland, Docking, Norfolk, for Creake Sybil 25039, chestnut filly, bred by the late H. V. Sheringham, South Creake, Norfolk; s. Creake Antonius 12002, d. Creake Sylvia 15017 by Challenger 3013.  
 423 II. (£5.)—ENOCH GLEN, Kaim Park, Bathgate, Scotland, for Danum Becky 24853, chestnut filly, bred by Ernest Bewley, Danum, Rathgar, co. Dublin; s. Adbolton Kingmaker 12274, d. Ambitious Becky 21845 by Beckingham Squire 8070.  
 422 III. (£3.)—SAMUEL BRERLEY, Rosslyn, Healey, Batley, Yorks, for Rosslyn Princess 25682, chestnut filly; s. Angram Astonishment 10930, d. Rosslyn Forest Queen 24065 by His Majesty 2513.  
 426 B. N.—A. E. ROBERTS, Hollin House, Court Road, Tunbridge Wells, Kent, for Red Girl.

Class 68.—*Hackney Mares, with Foals at foot.* [5 entries.]

- 429 I. (£10, & Champion.<sup>2</sup>)—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for Slashing Dorothy 23769, chestnut, foaled in 1913, bred by the late Sir Walter Gilbey, Bt., Elsenham Hall, Essex; s. Antonius 10569, d. Flash Dorothy 19088 by Forest Star 7445. [Foal by King's Chamberlain 13497.]  
 427 II. (£5, & E.N. for Champion.<sup>2</sup>)—HENRY GILDING, Gateacre, Liverpool, for Creake Lady 22912, chestnut, foaled in 1914, bred by the late H. V. Sheringham, South Creake, Norfolk; s. Antonius 10569, d. Creake Connie 19130 by Manifred 6301. [Foal by Cudham Candidate 13181.]  
 428 III. (£3.)—HENRY GILDING, for Flash Clara 19087, chestnut, foaled in 1908, bred by the late Sir Walter Gilbey, Bt., Elsenham Hall, Essex; s. Royal Danegelt 5785, d. Bonnie Clara 6419 by Connaught 1453. [Foal by Adbolton Forest King 12959.]  
 426 B. N.—A. BROMBY, Hart Lane, West Hartlepool, for Baby Beatty.

Class 69.—*Hackney Foals, the produce of Mares in Class 68.* [3 entries.]

- 433 I. (£5.)—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for black colt, foaled April 10; s. King's Chamberlain 13497, d. Slashing Dorothy 23769 by Antonius 10569.

<sup>1</sup> Champion Gold Medal, given by the Hackney Horse Society, for the best Stallion in Classes 63-65.

<sup>2</sup> Champion Gold Medal, given by the Hackney Horse Society, for the best Mare or Filly in Classes 66-68.

## lxii Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 432 II. (£3.)—HENRY GILDING, Gateacre, Liverpool, for chestnut filly, foaled April 12; s. Cudham Candidate 13181, d. Creak Lady 23912 by Antonius 10339.  
 431 III. (£2.)—A. BROMBY, Hart Lane, West Hartlepool, for chestnut colt, foaled April 26; s. Angnam Majesty 11867, d. Baby Beatty 24357 by Nugget 6152.

### Hackney Ponies.

**Class 70.—Hackney Pony Stallions, foaled in 1917 (not exceeding 13·3 hands), or 1918 (not exceeding 13·2 hands).** [3 entries.]

- 434 I. (£10, & Champion.<sup>1</sup>)—W. W. BOURNE, Garston Manor, Watford, Herts., for Bricket Fusilier 13309, bay, foaled in 1918; s. Fusee 12626, d. Colne Marvel 23959 by Gentleman John 3024.  
 435 II. (£5.)—ROBERT HORNER, 39 Waterloo Road, Middlesbrough, Yorks., for Little Aeroplanes 13512, bay, foaled in 1917; s. Fusee 12626, d. Sweet Liberty 25321 by Successful 8314.  
 436 III. (£3.)—J. E. RUSHWORTH, Eskdale, Bargate, Grimsby, for Sarmiento 13480, bay, foaled in 1918, bred by Mrs. F. E. Judson, 30 Holland Park, London, W.; s. Torchfire 9472, d. Kitty Melbourne 20785 by Successful 8314.

**Class 71.—Hackney Pony Stallions, foaled in or before 1916, not exceeding 14 hands.** [3 entries.]

- 433 I. (£10, & R.N. for Champion.<sup>2</sup>)—MRS. A. C. KING, Braishfield Manor, Romsey, Hants, for Braishfield Furor 13158, bay, foaled in 1916; s. Fusee 12626, d. Tissington Convert 21086 by Tissington Gideon 9042.  
 437 II. (£5.)—THOMAS GOLDSBROUGH, Stokesley, S.O., Yorks., for Fairy King 12836, chestnut, foaled in 1913; s. Talke Fire King 9832, d. Julia Snorer 18307 by Julius Caesar 2nd 5666.  
 438 III. (£3.)—JOHN THOMAS HARR, Spencer Beck Farm, Normanby, Eton, Yorks., for Lochavar 11815, bay, foaled in 1910, bred by E. J. Brown, Cross Acres, Gately, Cheshire; s. General Grudon 10232, d. Seaham Nivette 13512 by Monte Christo 7933.

**Class 72.—Hackney Pony Fillies or Geldings, foaled in 1917 (not exceeding 13·3 hands), or 1918 (not exceeding 13·2 hands).** [4 entries.]

- 443 I. (£10, & R. N. for Champion.<sup>3</sup>)—J. E. RUSHWORTH, Eskdale, Bargate, Grimsby, for Diana Southworth 23053, bay filly, foaled in 1917, bred by Joshua Ball, Southworth Hall, Warrington; s. Southworth Swell 11219, d. Southworth Merriment 21671 by Southworth Tissington 9808.  
 442 II. (£5.)—C. F. KENYON, Steele, Whitechurch, Salop, for Buckley Gem 25045, dark brown filly, foaled in 1918, bred by W. H. Jebson, Wilton House, Pocklington; s. Melbourne Shot 13065, d. Belle Wilton 24439 by Successful 8314.  
 440 III. (£3.)—J. BLAKELOCK, Shawfield, Healey, Rochdale, for La Bella 25014, brown filly, foaled in 1918, bred by Mrs. F. E. Judson, Holland Park, London; s. Torchfire 9472, d. Lucy Brown 24672 by Charming Boy 103701.  
 421 R. N.—J. W. G. SMITH, Aysgarth, S.O., Yorks., for Miss Enid.

**Class 73.—Hackney Pony Mares, with Foals at foot, not exceeding 14 hands.** [5 entries.]

- 444 I. (£10, & Champion.<sup>4</sup>)—W. W. BOURNE, Garston Manor, Watford, Herts., for Tissington Bauble 20256, dark bay, foaled in 1908, bred by Sir Gilbert Grounall, Bart., Walton Hall, Warrington; s. Berkeley Claudius 8372, d. Tissington Evalina 17061 by Warrener 8025. [Foal by Fusee 12626.]  
 445 II. (£5.)—P. W. WILDSMITH, 27 Cleveland Terrace, Darlington, for Glenavon Glide 23651, brown, foaled in 1914, bred by John B. Verel, Bridgeton, Montrose; s. Torchfire 9472, d. Polly Derby 13846 by Sir Gibbie 1612. [Foal by Sir Ivor 12737.]  
 446 III. (£3.)—ENOCH OLKEN, Kaim Park, Bathgate, Scotland, for Glenavon Satellite 24507, bay, foaled in 1918; s. Torchfire 9472, d. Glenavon Princess Caprice 23129 by Fireboy 7440. [Foal by Berkeley Nugget 8374.]

### Dales Ponies.<sup>5</sup>

**Class 74.—Dales Pony Stallions, foaled in 1917, 1918 or 1919.** [7 entries.]

- 456 I. (£10.)—JOHN W. PEART, Hill End, Wearhead, co. Durham, for Thunderbolt 955, grey, foaled in 1917, bred by Jacob Scott, Beck Foot, Middleton-in-Teesdale; s. Teesdale Comet, d. Fanny by Young Chancellor.

<sup>1</sup> Champion Gold Medal given by the Hackney Horse Society, for the best Stallion in Classes 70 and 71.

<sup>2</sup> Champion Gold Medal given by the Hackney Horse Society, for the best Mare or Filly in Classes 72 and 73.

<sup>3</sup> £25 towards these Prizes were given by the Dales Pony Improvement Society.

## Award of Live Stock Prizes at Darlington, 1920. lxiii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

- 451 II. (£5).—RALPH HARRISON, High Scrogs Farm, Middleton St. George, Darlington, for *Hilton Jock* 985, grey, foaled in 1918, bred by John Townson, Hilton Moor, Bishop Auckland; s. *Mountain Ranger*, d. *White Heather* by *Teesdale Comet*.
- 453 III. (£3).—T. E. DOUGILL, 72 Victoria Road, Darlington, for *Fairy King* 992, steel grey, foaled in 1918; s. *Merry Jock*, d. by *Dalesman*.
- 449 R.N.—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for *Linnel Grey Dale* 983, grey, foaled in 1919, bred by Tom Forster, Glen Hill, Allendale; s. *Linnel Comet* 841, d. Jess of Glenhill 3273. C.—452.
- Class 75.—*Dales Pony Stallions, foaled in or before 1916.* [7 entries.]
- 460 I. (£10).—CAPT. T. S. CHRISTIE, Wardrew, Gilsland, via Carlisle, for *Linnel Comet* 841, black, foaled in 1913, bred by Thomas Stainton, Tebay, Westmorland; s. *Daddy's Lad*.
- 458 II. (£5).—JAMES H. BROWN, Cordilleras, Marske, Richmond, Yorks., for *Gentleman John* 907, grey, foaled in 1915; s. *Teesdale Comet*, d. *Topsy* by *Green Gate Squire*.
- 456 III. (£3).—FORSTER ARMSTRONG, Beacon Grange, Hexham, Northumberland, for *Highland Laddie* 642, black, foaled in 1910, bred by Thomas V. Emerson, Hay Gate, Eastgate; s. *Mountain Hero* 2nd, d. *Heather Bell* by *Blooming Heather*.
- 462 R. N.—SAMUEL ROBSON, 20 Brandon Village, Durham, for *Black Blooming Heather*.
- Class 76.—*Dales Pony Fillies, foaled in 1917, 1918 or 1919.* [8 entries.]
- 465 I. (£10, & R. N. for Champion.<sup>1</sup>)—CAPT. T. S. CHRISTIE, Wardrew, Gilsland, via Carlisle, for *Miss Dale* 3632, dark brown, foaled in 1917, bred by R. O. Blayney, West Land End, Haydon Bridge; s. *Silver Top* 233, d. *Lady Dale* 3208.
- 458 II. (£5).—NORMAN FIELD, Darlington Hall, Darlington, for *Cockfield Topsy* 3896, bay, foaled in 1917, bred by F. B. McCall, Marwood, Barnard Castle.
- 466 III. (£3).—J. W. DALTON, Snowhope Close, Stanhope, co. Durham, for *Dewdrop* 3743, dark bay, foaled in 1917, bred by Mr. Bell, Marwood, Barnard Castle; s. *Bendie Squire*, d. by *Old Blooming Heather*.
- 467 R. N.—J. W. DALTON, for *Heather Blossom* 2nd.
- Class 77.—*Dales Pony Mares, with Foals at foot, by a registered Dales Pony Sire.* [8 entries.]
- 477 I. (£10, & Champion.<sup>1</sup>)—SANDERSON & SONS, Stanhope, Weardale, for *Stanhope Beauty* 3331, black, foaled in 1915, bred by T. Dixon Hutchinson, Wyrthwaite; s. *Young Sir Harry*, d. *Emma* 6465 by *Cross Fell Hero*. [Foal by *Black Blooming Heather*.]
- 473 II. (£5).—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for *Linnel Martha* 3278, bay, foaled in 1912. [Foal by *Linnel Comet* 841.]
- 471 III. (£3).—THOMAS BLACKETT, Westgarth, Butterknowle, for *Westgarth Sprightly Spark* 3537, brown, foaled in 1915; s. *Royal Ratho*, d. *Westgarth Maid of Honour* 3598 by *Real Fashion*. [Foal by *Teesdale Comet* 904.]
- 478 R. N.—JOHN TOWNSON, Hilton Moor, Bishop Auckland, for *White Heather*.

### Fell Ponies.<sup>2</sup>

- Class 78.—*Fell Pony Stallions, foaled in 1917, 1918 or 1919, not exceeding 14 hands.* [2 entries.]
- 480 I. (£10).—THE EARL OF LONSDALE, Lowther, Penrith, for *Mina*, black, foaled in 1917; s. *Glengary*, d. *Shrike* by *Mikado*.
- 479 II. (£5).—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for *Linnel Greybird* 984, grey, foaled in 1917.
- Class 79.—*Fell Pony Stallions, foaled in or before 1916, not exceeding 14 hands.* [2 entries.]
- 482 I. (£10).—JOHN RELPH, Turn Bank, Shap, Westmorland, for *Glengary* 640, black, foaled in 1911, bred by Thomas Glen, Brackenber, Appleby; s. *British Boy* 574, d. *Fanny* by *Blooming Heather* 325.
- 481 II. (£5).—JOHN HUDSON, Beck Side, Slededale, Shap, for *Dreadnought* 513, brown, foaled in 1905; s. *King of the Dales*, d. *Molly* by *Pride of the North*.
- Class 80.—*Fell Pony Fillies, foaled in 1917, 1918 or 1919, not exceeding 14 hands.* [1 entry.]
- 483 II. (£5).—HENRY HOLME & SONS, Thrimby, Hackthorpe, Penrith, for *Fancy* 2nd 5722, black, foaled in 1917, bred by Henry Holme; s. *Dalesman* 572, d. *Flora* 3rd 2249 by *Mighty Atom* 382.

<sup>1</sup> Challenge Cup, given by the Dales Pony Improvement Society for the best Registered Mare or Filly in Classes 76 and 77.

<sup>2</sup> £20 towards these Prizes were given by the Fell Pony Society.



# lxiv *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

## **Class 81.—*Fell Pony Mares (with Foals at foot), not exceeding 14 hands.***

[4 entries.]

- 485 I. (£10).—JOSEPH WILLIAM DENT, Fair View, Middleton-in-Teesdale, for **Monks Fanny** 3383, black, foaled in 1915; s. *Mountain Ranger* 598, d. *Stanhope Gate Fanny* 2336 by *Little John* 598. [Foal by *Sporting Times* 1916].
- 484 II. (£5).—JOSEPH ALLINSON & SON, Linglow, Great Asby, Appleby, for **Fanny Dale** 381, black, foaled in 1914, bred by John Relph, Turnbank, Shap. [Foal by *Glenarry* 3].
- 487 III. (£3).—THOMAS STAINTON, Town Head Farm, Tehay, Westmorland, for **Heather Belle** 4th 3829, bay, foaled in 1913, bred by W. Stainton, Town Head, Tehay; s. *Heather Model*, d. *Fanny* by *Sunshine*. [Foal by *North Star* 3rd 970.]

## **Welsh.<sup>1</sup>**

### **Class 82.—*Welsh Cob Stallions, foaled in or before 1916.*** [2 entries.]

- 488 I. (£10).—H. MEYTRICK JONES, Muthrafal, Meifod, Oswestry, for **Mathrafal Eiddwen** 966, bay, foaled in 1914, bred by Mr. Lloyd, Llanceryf, Welshpool; s. *King Flyer* 56, d. *Polly* of *Maesglynog* 4295 by *Cymro Ddu*.
- 489 II. (£5).—W. ARTHUR PUGH, Burbage, Hinckley, Leicestershire, for **Gwynny Cymro Derus**, brown, foaled in 1913, bred by Mr. Jones, Pentre Poeth, Llanfyllin; s. *Llwyn Planet* 523.

### **Class 83.—*Welsh Cob Mares, foaled in or before 1916, with Foals at foot, not exceeding 15 hands.*** [No entry.]

### **Class 84.—*Welsh Pony Stallions, foaled in 1916 (not exceeding 12 hands) or 1917 (not exceeding 11·3 hands), or 1918 (not exceeding 11·2 hands).***

[3 entries.]

- 491 I. (£10).—T. B. LEWIS, Bronallt, Llanwrtyd Wells, for **Irfon Talisman** 806, red roan, foaled in 1916; s. *Dyoll Starlight* 4, d. *Star* of *Epynt* 4625.
- 490 II. (£5).—CHARLES COLTMAN-ROGERS, Stange Park, Radnorshire, for **Stange Sunrise** 391, grey, foaled in 1916; s. *Shooting Star* 73, d. *Stange Satellite* 2536 by *Dyoll Starlight* 4.
- 492 III. (£3).—F. FITCH MASON, The Farnam, Killay, R.S.O. Glam., for **Penarth Shooting Star** 938, dark grey, foaled in 1917, bred by T. J. Powell, Pennybont, Radnorshire; s. *Shooting Star* 73, d. *Penarth Groylight* 1800 by *Greylight* 80.

### **Class 85.—*Welsh Pony Stallions, foaled in or before 1915, not exceeding 12 hands.*** [5 entries.]

- 494 I. (£10).—MRS. H. D. GREENE, Grove, Craven Arms, R.S.O. Salop, for **Grove King Cole** 2nd 566, grey, foaled in 1911; s. *Grove King* 197, d. *Bleddfa Tell Tule* 643 by *Tyrant*.
- 495 II. (£5).—MRS. H. D. GREENE, for **Shooting Star** 73, white, foaled in 1901, bred by S. M. Wilmot, The Châlet, Alveston, Glos.; s. *Dyoll Starlight* 4, d. *Alveston Belle* 573 by *Cymra*.
- 493 III. (£3).—CHARLES COLTMAN-ROGERS, Stange Park, Radnorshire, for **Stange Daylight** 248, grey, foaled in 1905, bred by D. Price, Queen's Square, Llangatock; s. *Dyoll Starlight* 4, d. *Star* 1st 248 by *Merlyn Myddfa*.
- 497 E.N.—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, for **Grove Elfin**.

### **Class 86.—*Welsh Pony Mares, foaled in or before 1916, with Foals at foot, not exceeding 12 hands.*** [4 entries.]

- 496 I. (£10).—MRS. H. D. GREENE, Grove, Craven Arms, R.S.O. Salop, for **Grove Fairy Queen** 5469, chestnut, foaled in 1915; s. *Shooting Star* 73, d. *Grove Fairy* 2531. [Foal by *Grove Grey Dawn* 693.]
- 500 II. (£5).—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Notts, for **Clumber Janet** 3rd 3754, grey, foaled in 1908; s. *Hardwick Sensation*, d. *Janet* 2nd. [Foal by *Hardwick Conqueror* 698.]
- 498 III. (£3).—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, Derbyshire, for **Grove Dora** 5781, grey, foaled in 1916, bred by Mrs. H. D. Greene, Grove, Craven Arms, R.S.O.; s. *Shooting Star* 73, d. *Grove Dolly* 1486 by *Dick Hill* 49. [Foal by *Basdiker* 500.]

<sup>1</sup> £30 towards these Prizes, and Silver Medals and Illustrated Certificates to the First Prize Winners, were given by the Welsh Pony and Cob Society.

## Award of Live Stock Prizes at Darlington, 1920. lxx

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

### Shetland Ponies.

**Class 87.—Shetland Pony Stallions, foaled in or before 1917, not exceeding 10·2 hands. [6 entries.]**

- 503 I. (£10, & R. N. for Champion.<sup>1</sup>)—MRS. ETTA DUFFUS, Penniwells, Elstree, Herts., for Vagary of Penniwells 841, black, foaled in 1912, bred by Ladies Hope, South Park, Bodiam; s. Helium 452, d. Viola 2168 by Oman 33.  
 507 II. (£5.)—R. W. R. MACKENZIE, Earlsall, Leuchars, Fife, for Why Not of Earlsall 588, grey, foaled in 1913; s. Empire Dry 539, d. Hillwick White Wings 585.  
 502 III. (£3.)—MRS. ETTA DUFFUS, for Huzzon of Penniwells 864, black, foaled in 1914, bred by Charles A. Rehd, Kirkcaldy; s. Haldor 270, d. Barbara of Penniwells 2919 by Nautilus 511.  
 505 E. N.—MISS E. M. JOLLIFFE, Newbus Grange, Darlington, for Roadventure of Earlsall.

**Class 88.—Shetland Pony Mares, with Foals at foot, not exceeding 10·2 hands. [10 entries.]**

- 510 I. (£10 & Champion.<sup>1</sup>)—MRS. ETTA DUFFUS, Penniwells, Elstree, Herts., for May Queen of Penniwells 3348, black, foaled in 1911; s. Dante of Conville 444, d. Mayday of Penniwells 2582 by Glencairn 314. [Foal by Remus of Penniwells 831.]  
 517 II. (£5.)—R. W. MACKENZIE, Earlsall, Leuchars, Fife, for Rose of Earlsall, black, foaled in 1913; s. Helmut of Earlsall 408, d. Rhoda of Earlsall 2738 by Thor 85. [Foal by Bandrol 635.]  
 518 III. (£3.)—MRS. S. C. E. LLOYD, Wood Hall, Norton, Worcester, for Birthright (vol. 23 p. 174), black, foaled in 1913, bred by Lady Arthur Cecil The Mount, Lymington, Hants; s. Forest Heirloom 541, d. Britannia 2798 by Vulcan 252. [Foal by Besieger 235.]  
 508 E. N.—R. W. CRESWELL-WARD, Neasham Hill, Darlington, for Frou Frou.

### Hunter Riding Classes.<sup>2</sup>

**Class 89.—Hunter Mares or Geldings, foaled in 1916, up to from 12 to 14 stones. [7 entries.]**

- 528 I. (£15.)—JOHN C. STRAKER, The Leazes, Hexham, for Irish Knight, bay gelding; s. Denis Richard, d. Banshee 2nd by Kilmarnock.  
 532 II. (£10.)—T. H. WARREN, Boughton, Northampton, for Over the Top 5823, chestnut filly; s. Chantuser.  
 519 III. (£5.)—F. G. D. COLMAN, Great Burgh, Epsom, Surrey, for Gratis, brown mare; s. Rockaway.  
 520 IV. (£3.)—GEOFF KENTON, Plainville, Haxby, York, for South Shore, bay gelding.  
 527 E. N.—JACOB SMITH, Somerley, Boroughbridge Road, Knaresborough, for Special.

**Class 90.—Hunter Mares or Geldings, foaled in 1916, up to more than 14 stones. [8 entries.]**

- 535 I. (£15.)—WILLIAM BARKER BROWN, South Holms, Slingsby, Milton, Yorks., for The Joker, bay gelding.  
 537 II. (£10.)—F. W. FLINTOFF, Bridge House, Cuckney, Mansfield, for Charger, brown gelding; s. Longboat, d. Streatham Queen.  
 538 III. (£5.)—JAMES MITCHELL, Greengill, Penrith, for Greystoke, grey gelding.  
 533 IV. (£3.)—JOHN BROWN, The Common, Kirbymoorside, for Brandy, brown gelding.

**Class 91.—Hunter Mares or Geldings, foaled in or before 1916, up to from 12 to 14 stones. [15 entries.]**

- 522 I. (£15.)—GEOFF KENTON, Plainville, Haxby, York, for Pussyfoot, bay gelding, foaled in 1914.  
 534 II. (£10.)—JOHN BROWN, The Common, Kirbymoorside, for Reg, bay gelding, foaled in 1915, bred by W. Vizard, Haysden, Tonbridge; s. Hanover Square.  
 540 III. (£5.)—NORMAN FIELD, Lartington Hall, Darlington, for Sandstone, bay gelding, foaled in 1914.  
 526 IV. (£3.)—THOMAS H. ROBSON, Burtree House, Cockerton, Darlington, for Top Hole, bay gelding; s. Renown.  
 554 E. N.—LT. COL. A. T. MILLER, The Paddocks, Copmanthorpe, York, for Reveille, bay gelding, foaled in 1914.

<sup>1</sup> Champion Silver Medal given by the Shetland Pony Stud Book Society for the best Shetland Pony in Classes 87 and 88.

<sup>2</sup> Prizes offered by the Darlington Local Committee.

## lxvi Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

### Class 92.—*Hunter Mares or Geldings, foaled in or before 1916, up to more than 14 stones.* [14 entries.]

- 548 I. (£15, & R. N. for Champion.<sup>1</sup>)—THE COUNTESS OF CHESTERFIELD, Beningbrough Hall, York, for *The Clown*, chestnut gelding, foaled in 1913.  
 550 II. (£10.)—NORMAN FIELD, Lartington Hall, Darlington, for *Bill Murphy*, bay gelding, foaled in 1915.  
 553 III. (£5.)—GEOFF KENYON, Plainville, Haxby, York, for *White Heart*, chestnut gelding, foaled in 1915.  
 555 IV. (£3.)—WILLIAM BARKER BROWN, for *The Joker* [see Class 90.]  
 551 R. N.—ARTHUR C. STRAKER, High Warden, Hexham, for *Ballymount*.  
 H. C.—555. C.—538.

### Class 93.—*Hunter Mares or Geldings, foaled in or before 1916, up to from 12 to 13·7 stones.* [14 entries.]

- 552 I. (£20.)—GEOFF KENYON, for *Pussyfoot* [see Class 91.]  
 576 II. (£15.)—JOHN DABBY, Hillmorton, Rugby, for *Starlight*, chestnut gelding, foaled in 1914.  
 541 III. (£10.)—J. KENNETH STEVENSON, The Chase, Upper Welland, Malvern Wells, for *Fieldmint*, chestnut gelding, foaled in 1913, bred by W. Brown, Slingsby, Malton; & *Paeldsham*, d. by *Peppermint*.  
 554 IV. (£5.)—LT.-COL. A. T. MILLER, for *Reveillee* [see Class 91.]  
 556 V. (£3.)—THOMAS H. ROBSON, for *Top Hole* [see Class 91.]  
 578 R. N.—JOHN DRAGE, Chapel Brampton, Northampton, for bay gelding.

### Class 94.—*Hunter Mares or Geldings, foaled in or before 1916, up to more than 13·7 and not more than 15 stones.* [22 entries.]

- 588 I. (£20, & Champion.<sup>1</sup>)—GEN. SIR J. F. LAYCOCK, D.S.O., Wiseton, Bawtry S.O. for *Brigadier*, chestnut gelding, foaled in 1912.  
 548 II. (£15.)—THE COUNTESS OF CHESTERFIELD, for *The Clown* [see Class 92.]  
 569 III. (£10.)—MAJOR H. FAUDEL-PHILLIPS, Moor Hall Stud, Cookham, Berks, for *Lidley Bank*, chestnut gelding, foaled in 1914, bred by the Earl of Kenmare, Ireland; & *Jeann*, Can. d. *Prima Donna* by *Scene Shifter*.  
 550 IV. (£5.)—NORMAN FIELD, for *Bill Murphy* [see Class 92.]  
 523 V. (£3.)—GEOFF KENYON, for *White Heart* [see Class 92.]  
 568 R. N.—MAJOR H. FAUDEL-PHILLIPS, for *Gentleman Joe*.

### Class 95.—*Hunter Mares or Geldings, foaled in or before 1916, up to more than 15 stones.* [9 entries.]

- 584 I. (£20.)—MRS. J. PUTNAM, Farringdon House, Exeter, for *Farringdon*, dark brown gelding, foaled in 1912.  
 590 II. (£15.)—JOHN DRAGE, Chapel Brampton, Northampton, for *The Clipper*, chestnut gelding, foaled in 1913.  
 595 III. (£10.)—BARONESS BURTON, Dochfour, Inverness, for *Captain*, chestnut gelding, foaled in 1914.  
 596 IV. (£5.)—B. DAVIES, Yeaton, Baschurch, Salop, for *Tenby*, bay gelding, foaled in 1915.  
 563 V. (£3.)—JOHN CLAY, Wooler, Northumberland, for *Godfrey*, brown gelding, foaled in 1911.  
 603 R. N.—VINCENT V. DAVIES, Birchdale, Stockton Heath, Warrington, for *First Flight 2nd*, chestnut gelding, foaled in 1914.

## Hacks or Riding Ponies.

(To be ridden.)

### Class 96.—*Mares or Geldings, not exceeding 10·2 hands. To be ridden by children born in or after 1911.* [6 entries.]

- 609 I. (£10.)—MRS. PHILIP HUNLOCK, Wingerworth Hall, Chesterfield, for *Squeaker*, brown gelding, foaled in 1916; & *Grov*, Fidler 564, d. *Little Dorrit* 73).  
 605 II. (£5.)—MASTER JOSE SHEPHERD, 20 Parkside, Knightsbridge, London, for *Sanjaento*, black and white gelding, foaled in 1916, bred by Senor S. J. Ungue, Buenos Aires.  
 606 III. (£3.)—JOSEPH TOWNSON, Morton Timmouth, Heighington, Darlington, for *Pretty Polly*, black mare, foaled in 1917, bred by John Rigg, Windermere.  
 607 R. N.—PETER VAUX, Brittenby Manor, Barton, Darlington, for *Tiny*, brown mare, foaled in 1916.

<sup>1</sup> Gold Challenge Cup value Fifty Guineas given by gentlemen interested in Hunters, for the best Mare or Gelding in Classes 92-95.

## Award of Live Stock Prizes at Darlington, 1920. lxvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 97.—Mares or Geldings, over 10·2 and not exceeding 12·2 hands.**  
To be ridden by children born in or after 1908. [3 entries.]

- 600 I. (£10.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for Pop Gun, grey gelding, foaled in 1918.  
610 II. (£5.)—M. MORLAND, 71 Osborne Avenue, Newcastle-on-Tyne, for Little Hero, brown gelding, foaled in 1916; *s.* Successful 8314.

**Class 98.—Mares or Geldings, over 12·2 and not exceeding 14 hands.** To be ridden by children born in or after 1906. [7 entries.]

- 601 I. (£10.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for Rumpelstiltskin, brown gelding, foaled in 1910.  
602 II. (£5.)—MRS. PHILIP HUNLOKE, for Sonia, bay mare, foaled in 1915.  
612 III. (£3.)—W. W. BURDON, Hartford House, Bedlington, Northumberland, for Irish Light, chestnut gelding, foaled in 1916.  
503 R. N.—R. CHARLES REED, The Chilterns, Bourne End, Bucks, for Queenie, chestnut mare, foaled in 1915, bred by J. Byrne, Prospect, Milltown, Dublin; *s.* Clarinet, *d.* by Backler.  
H. C.—597.

**Class 99.—Mares or Geldings, over 14 and not exceeding 15 hands.** [12 entries.]

- 571 I. (£10, & Champion.)—MAJOR H. FAUDEL-PHILLIPS, Moor Hall Stud, Cookham, Berks, for Taranella, chestnut mare.  
504 II. (£5, & R. N. for Champion.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for Sillabub, chestnut mare, foaled in 1918, bred by Miss Calmady Hamlyn, Bidlake Veau, Bridesdowe; *s.* Barbed Fence, *d.* Juncket 1252.  
506 III. (£3.)—MRS. HARPER, Dalton Terrace, The Mount, York, for Nicolette, chestnut mare, foaled in 1915, bred by H. Parker, Yealand Conyers, Carnforth; *s.* Hon. Jummy, *d.* by Ellison.  
616 R. N.—CAPT. W. P. JEFFCOCK, Cwmcarvan Court, Monmouth, for Biester.  
H.C.—612.

**Class 100.—Mares or Geldings, over 15 hands.** [11 entries.]

- 536 I. (£10.)—WILLIAM BARKER BROWN, South Holme, Shingsby, Malton, for Joy Ride, brown mare, foaled in 1916, bred by M. Humphrey, Kingthorpe, Pickering; *s.* Jovial.  
561 II. (£5.)—ERNEST BRADLEY, Newton Grange, Great Ayton, for Peacock, bay gelding, foaled in 1915, bred by Sir Arthur Dorman, Grey Towers, Nunthorpe; *s.* Lord of the Valley, *d.* by Dromanby.  
616 III. (£3.)—CAPT. W. J. JEFFCOCK, Cwmcarvan Court, Monmouth, for Freedom 5224, bay mare, foaled in 1912, bred by F. E. Bowser, Wigtoft, Boston, Lincs.; *s.* Splendour, *d.* Snowdrop 3rd 4434.  
558 R. N.—COL. THE HON. GUY WILSON, Stannick Park, Darlington, for Billy.

## Driving Classes.<sup>2</sup>

### SINGLE HARNESS.

**Class 101.—Harness Mares or Geldings, not exceeding 13·2 hands.** [7 entries.]

- 626 I. (£10.)—MRS. VAN NIEVELT VAN HATTUM, Holland Stud, Camilla Lacey, West Humble, Dorking, for Naughty Fire G 25, bay gelding, foaled in 1913, bred by H. Le Marchant, Elmwood, East Croydon; *s.* Torchfire 9472, *d.* Naughty Nailed by Berkeley Model.  
636 II. (£5.)—W. W. BOURNE, Garston Manor, Watford, Herts, for Bricket Fire 12112, dark bay gelding, foaled in 1910, bred by the late W. Cliff, Melbourne Hall, York; *s.* Royal Success, *d.* Wortley Belle 14873 by Sir Horace 5402.  
624 III. (£3.)—J. W. G. SMITH, Aysgarth S.O., Yorks, for Glen Melbourne 24227, bay mare, foaled in 1915, bred by the late W. Cliff, Melbourne Hall, York; *s.* Squille Melbourne 12167, *d.* Glenavon Kelpie 22586 by Torchfire 6472.  
623 IV. (£3.)—T. GOLDSBROUGH, Stokesley S.O., Yorks, for Fiery Belle 24212, brown mare, foaled in 1915, bred by A. J. Willett, Warrington; *s.* Torchfire 9472, *d.* Fire Belle 20668 by Fire Boy 7440.  
610 R. N.—M. MORLAND, 71 Osborne Avenue, Newcastle-on-Tyne, for Little Hero.

<sup>1</sup> Gold Challenge Cup, value Fifty Guineas, given by gentlemen interested in Hack and Riding Ponies for the best Animal in Classes 96-100.

<sup>2</sup> Prizes given by the Darlington Local Committee.

lxviii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 102.—*Harness Mares or Geldings, over 13·2 and not exceeding 14 hands.***  
[5 entries.]

- 639 (£10, R.N. for Champion! & G.M.)—W. W. BOURNE, Garston Manor, Watford, Herts., for *Bricket Fams* 11569, bay gelding, foaled in 1909, bred by the late W. Cliff, Melbourne Hall, York; s. *Royal Success*, d. *Wortley Belle* 14873 by Sir Horace 5402.  
635 II. (£5.)—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for Sir Erik, dark bay gelding, foaled in 1913, bred by the late W. Cliff, Melbourne Hall, York; s. *Royal Success* 8835, d. *Wortley Belle* 14873 by Sir Horace 5402.  
641 III. (£3.)—THOMAS EVANS, Berkely, St. James Garden, Swansea, for *Melbourne Wonder* G 74, dark brown gelding, foaled in 1915, bred by the late W. Cliff, Melbourne Hall, York; s. *Melbourne Hall* 11510, d. *Myra Melbourne* 22550 by *Successful* 8314.  
627 IV. (£3.)—MRS. VAN NIEVELT VAN HATTUM, Holland Stud, Camille Lacey, West Humble, Dorking, for *Fire Girl*, brown mare, foaled in 1913, bred by H. Le Marchant, Elmwood, East Croydon; s. *Torchfire* 9472, d. *Silvery Whitney*.  
642 R. N.—C. F. KENYON, Steele, Whitchurch, Salop, for *Buckley Searchlight*.

**Class 103.—*Harness Mares or Geldings, over 14 and not exceeding 15 hands.***  
[9 entries.]

- 656 I. (£10.)—MRS. JAMES PUTNAM, Farrington House, Exeter, for *Park Carnation* 22717, brown mare, foaled in 1907, bred by W. Bellamy, Wimbington; s. *Luath* 9323, d. *Park Sunshine* 22733 by Lord Dundreary 7907.  
656 II. (£5.)—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for V.C. dark brown gelding, foaled in 1915, bred by Robert Scott, Ithornholme, Carlisle; s. *Mathias* 6473, d. *Golden Glow* 20687 by *Mathias* 5473.  
659 III. (£5.)—HENRY GILDING, Gateacre, Liverpool, for *Glenavon Trixie* 24508, chestnut mare, foaled in 1914, bred by Enoch Glen Kaim Park, Bathgate; s. *Mathias* 6473, d. *Heathwood Caprice* 23882 by *Westfield Polonius* 9908.  
640 IV. (£3.)—W. W. BOURNE, Garston Manor, Watford, Herts., for *Garston Madge* 23946, brown roan mare, foaled in 1914, bred by G. Cobb, Garston, Watford; s. *Leopard* 9783, d. *Brompton Princess* 8707 by *Garton Duke* 3009.  
614 V. (£3.)—F. ARMSTRONG, George Hotel, Penrith, for *Duncrieve Sapho* 23527, dark chestnut mare, foaled in 1913, bred by J. W. M. Adamson, Duncrieve, Perthshire; s. *Hopwood Viceroy* 9280, d. *Terrington Saphira* 1899.  
618 R. N.—JOSEPH WILLIS, Eldon Street, Darlington, for *Angram Princess*.

**Class 104.—*Harness Mares or Geldings, over 15 and not exceeding 15·2 hands.***  
[11 entries.]

- 654 I. (£10, & Champion.)—ROBERT BLACK, The Grove, Osbaldwick, York, for *Field Marshal* G. 107, brown gelding, foaled in 1913, bred by J. E. Kerr, Harrieston Castle, Dollar; s. *Mathias* 6473, d. *Terrington Starlight* 15238 by *Goldfinder* 1791.  
623 II. (£5.)—MRS. VAN NIEVELT VAN HATTUM, Holland Stud, Camille Lacey, West Humble, Dorking, for *Dark Legend* G. 104, chestnut gelding, foaled in 1916, bred by D. A. Engel, Hemlington Park, Marton, S.O. Yorks.; s. *Mathias* 6473, d. *Hemlington Fairplay* by *Hopwood Viceroy* 9280.  
657 III. (£5.)—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for *Knight Commander*, chestnut gelding, foaled in 1913, bred by Mrs. E. Rodgers, Bridglands, Selkirk; s. *Mathias* 6473, d. *Bridglands Le Capite* by *Blaze* 2nd 2574.  
653 IV. (£3.)—JOSEPH SMITH, 56 Victoria Road East, Leicester, for *Leicester Princess* 24514, dark chestnut mare, foaled in 1916, bred by J. O. Nicol, London Road, Leicester; s. *Mathias* 6473, d. *Westfield Surprise* 21744 by *Paddock Polonius* 7203.

**Class 105.—*Harness Mares or Geldings over 15·2 hands.***  
[5 entries.]

- 646 I. (£10.)—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, Middlesex, for *Edgware Princess*, chestnut mare, foaled in 1914, bred by Capt. Horace P. Waters, Baysham Court, Ross; s. *Chepstow Cardinal* 9647, d. *Blaisdon Victoria* 12473 by *Goldfinder* 8th 1791.  
655 II. (£5.)—ROBERT BLACK, The Grove, Osbaldwick, York, for *Nancy E.* 24329, chestnut mare, foaled in 1914, bred by D. A. Engel, Hemlington Park, Marton, Yorks.; s. *King's Proctor* 11102, d. *Hemlington Fairplay* 21324 by *Hopwood Viceroy* 9280.  
625 III. (£5.)—J. W. G. SMITH, Aysgarth, S.O. Yorks., for *Towthorpe Aillette* 23575, chestnut mare, foaled in 1912, bred by Robert Whitworth, Market Weighton; s. *Polonius* 3931, d. *Black Pearl* 10704 by *Fireaway* of *Callis Wold* 1483.  
645 IV. (£3.)—CAPT. BERTRAM W. MILLS, for *Black Vogue* G. 841, black gelding, foaled in 1912, bred by James Prentice, Carolside, Uddington; s. *Mathias* 6473, d. *Inverness Duchess* of *Connaught* 15102 by *Garton Duke* of *Connaught* 3009.

<sup>1</sup> Gold Challenge Cup, value Fifty Guineas, given for the best Animal in Classes 101-106.

<sup>2</sup> Champion Gold Medal, given by the Hackney Horse Society for the best Mare or Gelding in Classes 101-106, the produce of a registered Hackney Stallion.

## Award of Live Stock Prizes at Darlington, 1920. lxix

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### DOUBLE HARNESS.

- Class 106.—*Pairs of Harness Mares or Geldings.* [8 entries.]  
 645 & 647 I. (£10, & Champion.<sup>1</sup>)—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for **Black Vogue** (see Class 105); and **Grand Viscount**, black gelding, foaled in 1906, bred by Gavin Ross, Dykehead, Chapeltown; s. Mathias 6473, d. Maid of Honour 1245 by Confidence 163.  
 668 & 667 II. (£5, & R. N. for Champion.<sup>1</sup>)—SIR JAMES BUCHANAN, BT, Lavington Park, Petworth, Sussex, for **Cadogan Sensation**, chestnut gelding; and **Cadogan Flower Girl**, chestnut mare.  
 672 & 674 III. (£5.)—CAPT. BERTRAM W. MILLS, for **Edgware Marlborough**, black gelding, foaled in 1915, bred by W. H. Moore, Seaton Hackney Farm, Morristown, New York; s. Marlborough 11139, d. Daisy Kate 19033 by Grandmaster 2nd £20; and **Edgware Peacock**, black gelding, foaled in 1913, bred by J. W. Peacock, The Lalace, Hockwold; s. Antonius 10550, d. Hockwold Port 11868 by Best Fashion 4637.

### TANDEM.

- Class 107.—*Pairs of Harness Mares or Geldings.* [5 entries.]  
 661 & 663 I. (£10, & Champion.<sup>2</sup>)—MISS SYLVIA BROCKLEBANK, Wing Grange, Oakham, for **Illumination**, bay gelding, foaled in 1906, bred by Rt. Hon. Frederick Wrench, Killacoon, Ballybrack, Co. Dublin; and **Optimistic**, grey gelding, foaled in 1905, bred by H. M. Davey, Maesmyddan Hall, Afonwen; s. Kassimode £207.  
 645 & 647 II. (£5, & R. N. for Champion.<sup>2</sup>)—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for **Black Vogue** (see Class 105); and **Grand Viscount** (see Class 106).

### Four-in-Hand Teams.

- Class 108.—*Mares or Geldings.* (*To be shown before a Coach.*) [4 entries.]  
 649 I. (£20, & Champion.<sup>3</sup>)—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for four blacks.  
 671 II. (£15.)—SIR JAMES BUCHANAN, BT, Lavington Park, Petworth, for four chestnuts.  
 664 III. (£10.)—MISS SYLVIA BROCKLEBANK, Wing Grange, Oakham, for four bays.

### Pit Ponies.<sup>4</sup>

*Which have been working in the Pits since January 1 and up to May 31, 1920. To be shown without tubs, in ordinary gears (not decorated), which have been in use since January 1, 1920.*

- Class 109.—*Two Ponies, not exceeding 11 hands.* [8 entries.]  
 678 I. (£10.)—BOLCKOW, VAUGHAN & COMPANY, LTD., Shildon Lodge Colliery, Middlesbrough-on-Tees, for **Quaker**, roan stallion, and **Briton**, black stallion.  
 683 II. (£5.)—NORTH BRANCORPETH COAL COMPANY, LTD., Littleburn Colliery, Durham, for **Jolly**, brown, foaled in 1914, and **Jock**, black, foaled in 1914.  
 680 III. (£3.)—LAMBTON & HETTON COLLIERIES, LTD., Lyons Office, Hetton-le-Hole, for **Mousy**, black, and **Pop**, black.  
 Class 110.—*Two Ponies, over 11 and not exceeding 12·2 hands.* [8 entries.]  
 669 I. (£10.)—LAMBTON & HETTON COLLIERIES, LTD., Lyons Office, Hetton-le-Hole, for **Pop**, bay, and **Lolly**, brown.  
 684 II. (£5.)—BOLCKOW, VAUGHAN & COMPANY, LTD., Shildon Lodge Colliery, Middlesbrough-on-Tees, for **Hussar**, brown stallion, and **Robin**, chestnut gelding.  
 691 III. (£3.)—SIR B. SAMUELSON & COMPANY, LTD., Littleton, Durham, for **Chancey**, chestnut, and **Roger**, bay.  
 685 R.N.—BOLCKOW, VAUGHAN & COMPANY, LTD., for **Salter** and **Postman**.

### Agricultural Horses.<sup>4</sup>

- Class 111.—*Gelding, foaled in or before 1917.* [5 entries.]  
 65 I. (£10.)—EDMUND PARKER, Ledston Mill, Castleford, Yorks., for **Prince** (see Class 11).  
 139 II. (£5.)—D. D. MURRAY, The Dene, Seaham Harbour, for **Jock**, brown, foaled in 1915, bred by M. Atkinson, West Auckland; s. Pride of the North 17419.

<sup>1</sup> Gold Challenge Cup, value Fifty Guineas, given by two members of the R.A.S.E., for the best Pair in Class 106.

<sup>2</sup> Gold Challenge Cup, value Fifty Guineas, given by a member of the R.A.S.E., for the best Tandem in Class 107.

<sup>3</sup> Gold Challenge Cup, value Fifty Guineas, given by a member of the R.A.S.E., for the best Team in Class 108.

<sup>4</sup> Prizes given by the Darlington Local Committee.

## lxx *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 693 III. (£3).—THOMAS FINLEY, Harperley, S.O., co. Durham, for *Harperley Major*, bay Clydesdale, foaled in 1916, bred by William Kirkland, Lockend, Coylton, Ayr; s. Dunure Footprint 15203, d. Lockend Beauty 23883.  
692 R. N.—ERNEST SHERWIN, Rand Grange Farm, Bedale, for *Rand Royal*, brown Shire, foaled in 1917, bred by W. Atkinson, Bubwith; s. Derwen Forester.

Class 112.—*Geldings, foaled in 1918.* [4 entries.]

- 698 I. (£10).—W. F. PINKNEY, Stubb House, Northallerton, for *Northallerton Dread Nona*, bay Shire; s. Grange Nonsuch 32393, d. Northallerton Victoria 68040 by Owston Tom 22061.  
697 II. (£5).—WILLIAM F. LAX, Carlton Grange, Aldbrough, Darlington, for bay Shire; s. Bramhope Nestor.  
696 III. (£3).—ALBERT BUCKLE, Morton Carr, Nunthorpe, for black; s. Royal Master d. by Hillhead Chieftain.  
695 R. N.—ALBERT BUCKLE, for black; s. Royal Master, d. by Lord Lonsdale.

Class 113.—*Cuts or Fillies, foaled in 1919.* [8 entries.]

- 703 I. (£10).—W. F. PINKNEY, Stubb House, Northallerton, for *Northallerton Girlie*, bay Shire filly; s. Great Eastern Harold 32295, d. Northallerton Victoria 68040 by Owston Tom 22061.  
704 II. (£5).—T. W. STEPHENSON, Denton Grange, Heighington, Co. Durham, for *Denton Doreus*, brown Clydesdale filly; s. Dunure Efficiency 19100, d. Cowton Dora 39855.

Class 114.—*Fillies foaled in 1918.* [5 entries.]

- 117 I. (£10).—D. D. MURRAY, The Dene, Seaham Harbour, for *Seaham Ideal*, brown; s. Auchenflower 12007, d. Bent Baroness 24095 by Baron of Buchlyvie 11363.  
706 II. (£5).—GEORGE LAX, Laylands, Scorton, Darlington, for *Flash*, brown Shire; s. Thorndale Samson 34388.  
705 III. (£3).—ALBERT BLACKETT, Prospect Farm, Yarm Road, Darlington, for *Annie Laurie*, brown Clydesdale, bred by Thomas Petch, Great Ayton, Yorks.; s. Lord Howard 14240, d. by Hammish Mohun 10850.

Class 115.—*Mares (with Foals at foot) foaled in or before 1917.* [4 entries.]

- 138 I. (£10).—D. D. MURRAY, The Dene, Seaham Harbour, for *Queen o' the Ring* (see Class 19).  
707 II. (£5).—THOMAS FINLEY, Harperley, S.O., Co. Durham, for *Harperley Rusk*, bay Clydesdale, foaled in 1916; s. Treasure 18143, d. Rusk 18271 by Sir Hugo 10924. [Foal by Apukwa 14567.]  
708 III. (£3).—THOMAS FINLEY, for *Jargonelle of Raehan*, black Clydesdale, foaled in 1916, bred by S. Mitchell, Boquhan, Kippen Station; s. Dunure Footprint 15203, d. Boquhan Lady Breda 37833 by Oyamu 13118. [Foal by Apukwa 14967.]

### Trade Turnouts.<sup>1</sup>

Class 116.—*Heavy Draught Mares or Geldings, having been worked by a Farmer, Trader, Railway Company, or Corporation, for not less than three months immediately prior to the date of the Show.* [1 entry.]

- 139 I. (£10).—D. D. MURRAY, The Dene, Seaham Harbour, for *Jock* (see Class 111.)

Class 117.—*Teams of Two Heavy Draught Mares or Geldings having been worked by a Farmer, Trader, Railway Company, or Corporation, for not less than three months immediately prior to the date of the Show.*

[No entry.]

Class 118.—*Vanner Mares or Geldings, suitable for and having been worked by a Farmer or Tradesman for not less than three months immediately prior to the date of the Show, and regularly driven by the owner or his servants for the delivery of goods.* [1 entry.]

- 711 I. (£10).—A. J. RAMSHAY, East Appletton, Catterick, for *Bonnie*, dark brown, foaled in 1914; s. Trup Rival, d. Beauty.

Class 119.—*Light Mares or Geldings, suitable for and having been worked by a Farmer or Tradesman for not less than three months immediately prior to the date of the Show, and regularly driven by the owner or his servants for the delivery of his goods.* [3 entries.]

- 712 I. (£10).—ROBERT BARKER, Woodlands Road, Darlington, for *Chocolate King*, chestnut gelding, foaled in 1915.  
714 II. (£5).—JOSEPH WILLIS, Eldon Street, Darlington, for *Angram Majesty's Princess*, bay mare, foaled in 1905, bred by Mrs Fletcher & Sons, Angram, York.  
713 III. (£3).—ROBERT BARKER, for *Storm King*, chestnut gelding, foaled in 1912.

<sup>1</sup> Prizes given by the Darlington Local Committee.

## Award of Live Stock Prizes at Darlington, 1920. lxxi

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### JUMPING COMPETITIONS.<sup>1</sup>

#### Class A.—*Mares or Geldings.* [17 entries.]

- 2 I. (£20).—FRANK ALLISON, West Farm, Selby, for *Tempress*.  
 3 { *Equal Prize* } F. W. FOSTER, Marsh Farm, Etwell, Derby, for *Byplane*.  
 14 { of £7 10s. } ERNEST BRADLEY, Newton Grange, Great Ayton, for brown gelding.  
 13 IV. (£3).—T. E. WHITTINGHAM, Byrkley Street, Burton-on-Trent, for *John B*.  
 17 V. (£3).—S. W. WOODHALL, Wellington, Salop, for *Tip Top*.

#### Class B.—*Mares or Geldings.* [16 entries.]

- 6 I. (£15).—T. E. WHITTINGHAM, Byrkley Street, Burton-on-Trent, for *John B*.  
 14 II. (£10).—ERNEST BRADLEY, Newton Grange, Great Ayton, for *Spider*.  
 15 III. (£5).—F. W. FOSTER, Marsh Farm, Etwell, Derby, for *Comet*.  
 7 IV. (£3).—ERNEST BRADLEY, for *Little Wonder*.  
 16 V. (£3).—J. NORBURY, Heathside, Knutsford, for *Peacock*.

#### Class C.—*Mares or Geldings.* [16 entries.]

- 3 I. (£10).—F. W. FOSTER, Marsh Farm, Etwell, Derby, for *Comet*.  
 8 II. (£5).—F. W. FOSTER, for *Byplane*.  
 8 III. (£5).—S. W. WOODHALL, Wellington, Salop, for *Tip Top*.  
 2 IV. (£3).—J. NORBURY, Heathside, Knutsford, for *Peacock*.  
 15 V. (£3).—W. H. WELBURN, Water Fryston, Ferrybridge, for *Mustard*.

#### Class D.—*Ponies, not exceeding 14.2 hands.* [6 entries.]

- 6 I. (£10).—J. NORBURY, Heathside, Knutsford, for *Peacock*.  
 3 II. (£5).—THOMAS & HENRY WARD, Almsford Bank, Leeds Road, Harrogate, for *Fisherman*.  
 4 III. (£3).—H. BROWN, Westbourne House, Westbourne Road, West Hartlepool.

#### Class E.—*Champion Class. Mares or Geldings.* [17 entries.]

- 13 I. (£20).—FRANK ALLISON, West Farm, Selby, for *Tempress*.  
 4 II. (£10).—F. W. FOSTER, Marsh Farm, Etwell, Derby, for *Comet*.  
 8 III. (£5).—S. W. WOODHALL, Wellington, Salop, for *Tip Top*.  
 11 IV. (£3).—ERNEST BRADLEY, Newton Grange, Great Ayton, for *Little Wonder*.  
 5 V. (£3).—J. NORBURY, Heathside, Knutsford, for *Peacock*.

## CATTLE.

### Shorthorns.<sup>2</sup>

#### Class 120.—*Shorthorn Bulls, calved in or before 1917.* [11 entries.]

- 721 I. (£10, & Champion.<sup>3</sup>)—OLIVER W. PORRITT, Hotchley Farm, East Leake, Loughborough, for *Sanquhar Grand Courtier* 132183, red, born May 3, 1915, bred by Messrs. Law, Mains of Sanquhar, Forres; s. Collynie Grand Knight 119549, d. *Sanquhar Rachel* by Hawthorn Champion 99095.  
 717 II. (£5, & E. M. for Champion.<sup>3</sup>)—GEORGE HARRISON, Gainford Hall, Darlington, for *Euler* 132136, red roan, born March 24, 1915, bred by Major E. G. S. Hornby, Dalton Hall, Burton, Westmoreland; s. Mountaineer 121685, d. Dalton Rosemary 3rd by Commander 105091.  
 720 III. (£3).—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for *Pellipar Iris* 144396, roan, born Feb. 19, 1917, bred by Lieut.-Col. R. J. L. Ogilby, Pellipar House, Dungiven, Co. Derry; s. Edgcote Regalia 125396, d. Pellipar Pansy by Count Crystal 102576.  
 715 IV. (£2, & H. M. THE KING, The Royal Farms, Windsor, for *Windsor Norseman* 134385, red, born Nov. 23, 1915; s. Notlaw Boxer 127163, d. Nonpareil 54th by Mustodon 102939.  
 724 E. N.—WALTER SPURR, Wexham, Anderby, Aford, Lincs, for *Kingston's Heir*, H.C.—723.

<sup>1</sup> Prizes given by the Darlington Local Committee.

<sup>2</sup> £50 towards these Prizes were given by the Shorthorn Society.

<sup>3</sup> Champion Prize of £50 given by the Shorthorn Society, for the best Bull in Classes 120-124. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Bull.



lxxii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 121.—Shorthorn Bulls, calved on or between January 1, 1918, and March 31, 1918. [12 entries.]**

- 735 I. (£10).—THE DUKE OF NORTHUMBERLAND, Alnwick Castle, Northumberland, for **Ducal Favourite**, white, born March 9; s. Aldsworth Duke 123844, d. Favourite Roebuck (vol. 58, p. 884) by Alnwick Favourite 90653.  
 736 II. (£5).—H.R.H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for **Christian King** 147900, red roan, born Jan. 19; s. Butterfly Knight 130029, d. Adbolton Ro-y Queen by King Christian of Denmark 88316.  
 737 III. (£3).—O. S. GUNTHER, Tongwood, Hawkhurst, Kent, for **Tongwood Helpmate**, roan, born March 1; s. Knight Lavender 121048, d. Tongwood Helena (vol. 58, p. 836) by Lord Augustus 106216.  
 738 IV. (£2).—F. B. WILKINSON, Cavendish Lodge, Edwinstowe, Newark, for **Peace and Plenty**, roan, born Feb. 2, bred by J. W. Whitcome; s. Jack-a-Dandy 131610, d. Miss Julia by Stand Firm 93524.  
 739 R. N.—DAVID THOMAS DYKE, Lower Slaughter, R.S.O., Gloucestershire, for **Slaughter Goldsmith**, H.C.—727. O.—732.

**Class 122.—Shorthorn Bulls, calved on or between April 1, 1918, and December 31, 1918. [23 entries.]**

- 751 I. (£10).—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for **Inschfield Clipper King**, roan, born May 16, bred by G. A. Bruce, Inschfield, Insch, Aberdeenshire; s. Vulcan of Naemoor 131187, d. Crewe Clipper 2nd (vol. 61, p. 685) by Bold Butterfly 114395.  
 743 II. (£5).—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks., for **Swinton Rosierucian** 2nd, roan, born April 4; s. Swinton Royal Blood 133660, d. Gainford Roschud 3rd (vol. 60, p. 811) by Golden Fortune 111922.  
 757 III. (£3).—F. B. WILKINSON, Cavendish Lodge, Edwinstowe, Newark, for **Golden Sceptre**, roan, born April 14, bred by A. Crombie, Woodend, Newmachar; s. Brave Marquis 119154, d. Broadhooks Queen 8th (vol. 60, p. 636) by Quick Hope 92986.  
 758 IV. (£2).—EDWARD SMITH, 107 Bransford Road, Worcester, for **Farmhill Mariner**, roan, born April 22, bred by J. B. Henderson, Farmhill, Coagh, Ireland; s. Royal Mariner 130865, d. Lawton Dorothy 2nd (vol. 63, p. 885) by Dunglass Chieftain 115188.  
 759 V. (£2).—F. B. WILKINSON, for **Shenley White Ensign**, white, born Aug. 1, bred by C. F. Raphael, Porters Lodge, Shenley; s. Edgecote Brigade Major 130615, d. Golden Necklace (vol. 60, p. 1093) by Bachelor of Arts 101330.  
 745 R.N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Vahan Monarch**, H.C.—752, 754. C.—741.

**Class 123.—Shorthorn Bulls, calved on or between January 1, 1919, and March 31, 1919. [29 entries.]**

- 785 I. (£10).—J. M. STRICKLAND, Bainesse, Catterick, Yorks., for **Brandsby Undine King**, dark roan, born Jan. 18; s. Millhills Rothes King 138090, d. Brandsby's Lady Undine 3rd (vol. 62, p. 1118) by Brandsby's Aristocrat 4th 114422.  
 773 II. (£5, & Special I.1).—GEORGE HARRISON, Gainford Hall, Darlington, for **Count Broadhooks**, roan, born Feb. 25, bred by Reps. of the late Thomas Douglas Rhyne, Fearn, Ross-shire; s. Red Knight 133028, d. Countess Broadhooks 2nd (vol. 62, p. 769) by Diamond Emperor 119867.  
 781 III. (£3).—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for **Rothes King** 4th, roan, born Jun. 16, bred by Mrs. D. Stewart, Millhills, Crief; s. Collynie Bright Star 130287, d. Queen of Millhills (vol. 63, p. 1171) by Collynie Cruickshank 105068.  
 781 IV. (£2).—H.M.TH. KING, The Royal Farms, Windsor, for **Windsor Matchless**, light roan, born Feb. 23; s. Windsor Archie 140183, d. Matilda 3rd (vol. 57, p. 418) by Golden Treasure 96348.  
 769 V. (£2).—SIR RICHARD COOPER, Bt., M.P., Billington Manor, Leighton Buzzard, for **Billington Augustus**, dark roan, born March 9; s. Hean Lancelot 142673, d. Shenstone Augusta by Macebeaver 126693.  
 787 R. N.—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for **Bilsington Golden Harvest**, H.C.—779.  
 774 (Special II.1).—GEORGE HARRISON, for **Gainford Premier**.  
 785 (Special I.2).—J. M. STRICKLAND, for **Brandsby Undine King**.  
 831 (Special II.2).—J. M. STRICKLAND, for **Brandsby's Lord Ramsden** 6th.

<sup>1</sup> Two Special District Prizes were given. (I.) £10, by the Shorthorn Society, for the best Bull, (II.) £5, by the Durham Agricultural Society, for the second best Bull, in Classes 123 and 124, the property of Exhibitors residing in Co. Durham.

<sup>2</sup> Two Special District Prizes were given. (I.) £10, by the Shorthorn Society, for the best Bull, (II.) £5, by the Yorkshire Agricultural Society, for the second best Bull, in Classes 123 and 124, the property of Exhibitors residing in Yorkshire.

# Award of Live Stock Prizes at Darlington, 1920. lxixiii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

## Class 124.—*Shorthorn Bulls, calved on or between April 1, 1919, and December 31, 1919.* [50 entries.]

- 803 I. (£10).—SIR RICHARD COOPER, BT. M.P., Billington Manor, Leighton Buzzard, for Billington Snowstorm, white, born May 8; s. Seottie 133416, d. Gipsy Girlie (vol. 61, p. 1125) by Red Baron 112682.  
 791 II. (£5).—H.R.H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for Diamond Butterfly, roan, born April 18; s. Butterfly Knight 130023, d. Miss Butterfly 5th (vol. 61, p. 619) by Leap Year 116201.  
 816 III. (£3).—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for Dandy Broadhooks, roan, born April 1, bred by James A. Perry, Killane, Ahaghill, Co. Antrim; s. Rosewood's Emperor 145054, d. Killane Broadhooks 2nd (vol. 63, p. 1076) by Newton Renown 121779.  
 827 IV. (£2).—WALTER MONTAGU SCOTT, Nether Swell Manor, Stow-on-the-Wold, Glos., for Lavender Royal, red, born April 9; s. Windsor Lad 115735, d. Hean Lavender 3rd (vol. 62, p. 933) by Royal Roman 122632.  
 804 V. (£2).—RICHARD CORNELIUS, Lutwyche Hall, Much Wenlock, Salop, for Peace Day, roan, born June 29; s. Edgcote Baronet 138355, d. Lutwyche Rosewood (vol. 64, p. 619) by Hindley Bridegroom 131487.  
 792 E. N.—H.R.H. THE PRINCE OF WALES, K.G., for Oberon.  
 H.C.—795, 798. C.—798, 831.  
 726, 791, 792 I. (Special.<sup>1</sup>)—H.R.H. THE PRINCE OF WALES, K.G., for Christian King, Diamond Butterfly, and Oberon.  
 715, 761, 790 II. (Special.<sup>1</sup>)—H.M. THE KING, for Windsor Norseman, Windsor Matchless, and Windsor Royal Stamp.

## Class 125.—*Shorthorn Cows (in-milk), calved in or before 1916.* [7 entries.]

- 843 I. (£10, and Champion.<sup>2</sup>)—W. M. CAZALET, Fairlawne, Tonbridge, for Balnakyle Augusta 2nd (vol. 63, p. 716) roan, born Dec. 20, 1916, calved Jan. 10, 1920, bred by J. Cameron, Balnakyle, Munloch; s. Ossian of Cluny 121904, d. Balnakyle Augusta by Collynie Golden Stamp 114751.  
 841 II. (£5).—JOHN BARNES, Aikbank, Wigton, Cumberland, for Charlotte Queen, (vol. 60, p. 614) light roan, born Feb. 17, 1913, calved Feb. 8, 1920, bred by John W. Barnes, Longthwaite House, Wigton, Cumberland; s. Gairford Chieftain 105569, d. Charlotte Maid by Lord Ramsden 2nd 99461.  
 846 III. (£3).—JOHN TAYLOR, Octon, Hunmanby, S.O., for Settrington Fairy 3rd (vol. 61, p. 769) white, born May 18, 1914, calved Jan. 17, 1920, bred by C. O. Hall, Settrington House, Malton; s. Vanity's Favourite 107338, d. Settrington Fairy by Nonpareil Fame 2nd 89425.  
 847 E. N.—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for Bilsington Lady Tarves 16th.  
 C.—844.

## Class 126.—*Shorthorn Heifers (in-milk), calved in 1917.* [6 entries.]

- 848 I. (£10).—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury, for Hardwicke Corday (vol. 64, p. 736) red roan, born March 8, calved April 20, 1920; s. Favourite Rosewood 120227, d. Hardwicke Countess by Barteliver Trump 2nd 104716.  
 850 II. (£5).—W. M. CAZALET, Fairlawne, Tonbridge, for Garbity Princess Royal 4th (vol. 64, p. 1035), red, born Dec. 2, calved May 25th, 1920, bred by James McWilliam, Garbity, Octon; s. Edgcote Flatterer 123374, d. Garbity Princess Royal 3rd by Golden Favourite 115392.  
 853 III. (£3).—J. M. STRICKLAND, Bainesse, Catterick, Yorks., for Heslerton Belle 16th (vol. 64, p. 1310), roan, born April 18, calved May 10, 1920, bred by Thomas Campion, East Heslerton, York; s. Doune Asterisk 130653, d. Heslerton Belle 11th by Allerton Rosarian 110742.  
 849 E. N.—GEORGE BRUDENELL, Deene Park, Peterborough, for Miss Ramsden 9th.

## Class 127.—*Shorthorn Heifers, calved on or between January 1, 1918, and March 31, 1918.* [2 entries.]

- 855 I. (£10).—WALTER MONTAGU SCOTT, Nether Swell Manor, Stow-on-the-Wold, Glos., for Gay Lassie 15th, white, born March 17; s. Windsor Lad 113735, d. Beatrice (vol. 60, p. 1059) by Primrose Star 106555.  
 854 II. (£5).—THE DUKE OF NORTHUMBERLAND, Alnwick Castle, Northumberland, for Queen Millicent, roan, born Feb. 12; s. Aidsworth Duke 123844, d. Gladstone Millicent (vol. 57, p. 1019) by Star of Rothbury 104033.

<sup>1</sup> Special Prizes of £15 First Prize, and £10 Second Prize, given for the best groups of three Bulls bred by Exhibitor in Classes 120-124.

<sup>2</sup> £40 towards these Special Prizes (1 & 2 p. lxxiv) were given by the Shorthorn Society.  
<sup>3</sup> Champion Prize of £20 given by the Shorthorn Society for the best Cow or Heifer in Classes 125-130. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Cow or Heifer.

lxxiv *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 128.**—*Shorthorn Heifers, calved on or between April 1, 1918, and December 31, 1918.* [16 entries.]

- 850 I. (£10, & R. N. for Champion.<sup>1</sup>)—SIR RICHARD COOPER, BART., M.P., Billington Manor, Leighton Buzzard, for Ruby Queen 8th, white, Oct. 3; s. Scottie 133418, d. Ruby Queen 3rd (vol. 62, p. 721) by Beaufort Golden Gift 10972.  
871 II. (£5.)—JOHN HENRY TOPPIN, Musgrave Hall, Skelton, Penrith, for Mischief, white, born Sept. 27; s. Masterkey 137896, d. Merrie Maid (vol. 55, p. 1208) by Baron Fitz Rosebud 94181.  
862 III. (£3.)—JOSEPH HARRIS, Brackenburgh Tower, Carlisle, for Water Lily 4th, roan, born April 3; s. Duke of Whitehall 136251, d. Water Lily 3rd (vol. 60, p. 816) by Oxford Duke of Calhwaite 54th, 116899.  
870 IV. (£2.)—JOHN HENRY TOPPIN, for Bright Princess, roan, born May 16; s. Masterkey 137896, d. Bright Rose (vol. 61, p. 1075) by Midshipman 121584.  
863 R. N.—GEORGE HARRISON, Gainford Hall, Darlington, for Gainford Marigold. H. C.—856. C.—861, 864.

**Class 129.**—*Shorthorn Heifers, calved on or between January 1, 1919, and March 31, 1919.* [24 entries.]

- 878 I. (£10.)—W. M. CAZALET, Fairlawne, Tonbridge, for Princess Royal Cicely, roan, born Feb. 3, bred by Sir Herbert Leon, Bart., Bletchley Park, Bletchley; s. Edgrote White Eagle 115254, d. Princess Royal Betty (vol. 59, p. 830) by Coming Storm 108212.  
865 II. (£5.)—WILLIAM JOHN HOSKEN, Pulsack, Hayle, Cornwall, for Manor Minorea, roan, born March 14, bred by Arthur Isaac, Manor France Farm, Blandford; s. Ascot Javelin 140610, d. Aikbank Minorea (vol. 59, p. 551) by Gainford Chieftain 105559.  
861 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington, for Gainford Broadhooks 3rd, roan, born Jan. 13; s. Ruler 130156, d. Collynie Broadhooks (vol. 61, p. 717) by Dunseld Storm King 8827.  
877 IV. (£2.)—RICHARD CORNELIUS, Lutwyche Hall, Much Wenlock, Salop, for Lutwyche Belle 2nd, roan, born Jan. 28; s. Hindley Bridegroom 131487, d. Eastham Belle (vol. 59, p. 361) by Village Beau 87631.  
893 V. (£2.)—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for Bilsington Rosebud 11th, white, born Jan. 12th, bred by the Exors. of R. J. Balston, Bilsington Priory; s. Dewlaps Royal Sovereign 125170, d. Bilsington Rosebud 7th (vol. 62, p. 631) by Bilsington Archer 119025.  
868 R. N.—GEORGE HARRISON, Gainford Hall, Darlington, for Gainford Fairy Queen. H. C.—862. C.—813, 887.

**Class 130.**—*Shorthorn Heifers, calved on or between April 1, 1919, and December 31, 1919.* [25 entries.]

- 919 I. (£10.)—JOHN HENRY TOPPIN, Musgrave Hall, Skelton, Penrith, for Bright Morn, roan, born April 2; s. Masterkey 137896, d. Bright Pearl (vol. 60, p. 1114) by Saughbar Sentinel 11005.  
869 II. (£5.)—W. M. CAZALET, Fairlawne, Tonbridge, for Fairlawne Broadhooks 13th, dark roan, born April 2; s. Collynie Clipper King 135816, d. Duchess Broadhooks 14th (vol. 59, p. 681) by Proud Warrior 106653.  
915 III. (£3.)—EXORS. OF THE LATE W. E. PAIN, East Stratton, Micheldever Station, Hants, for Marsh Marigold, dark roan, born April 24; s. Windsor Elector 140197, d. Cotehay Marigold 2nd (vol. 64, p. 1189) by Bletchley Vizie 101822.  
900 IV. (£2.)—W. M. CAZALET, for Fairlawne Orange Blossom 4th, dark roan, born April 30th; s. Collynie Clipper King 135816, d. Orange Twig (vol. 60, p. 746) by Sittiton Style 110212.  
H. C.—901, 902, 905. C.—866, 908.  
717, 853, 881, 882. Special.\*—GEORGE HARRISON, for Ruler, Gainford Marigold 4th, Gainford Broadhooks 3rd, and Gainford Fairy Queen.  
870, 871, 919 I. (Special.\*)—JOHN HENRY TOPPIN, for Bright Princess, Mischief, and Bright Morn.  
859, 901, 902 II. (Special.\*)—SIR RICHARD COOPER, BART., M.P., for Ruby Queen 6th, Billington Golden Drop 2nd, and Billington Ury.

<sup>1</sup> Champion Prize of £20 given by the Shorthorn Society for the best Cow or Heifer in Classes 125–130. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Cow or Heifer.

<sup>2</sup> A Special Prize of £20 was given through the Darlington Local Committee for the best group, consisting of a Bull and three of his get of either sex in Classes 120–130. The Produce must be bred by the exhibitor.

<sup>3</sup> A Special Prize of £15 First, and £10 Second, was given for the best group of three Cows or Heifers, bred by Exhibitor in Classes 125–130.

£40 towards these Special Prizes († p. lxxiii & †) were given by the Shorthorn Society

## Award of Live Stock Prizes at Darlington, 1920. lxxv

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Dairy Shorthorns.<sup>1</sup>

**Class 131.—Dairy Shorthorn Bulls, calved in or before 1917.** [12 entries.]

- 928 I. (£10, & Champion.<sup>2</sup>)—ROBERT N. TORY, Anderson Manor Farm, Blandford, Dorset, for Babraham Lord Price 140574, roan, born Sept. 21, 1917, bred by C. R. W. Adeane, Babraham Hall, Cambridge; s. Lord Lee 2nd 121257, d. Babraham Priceless by Dauntless 111497.
- 921 II. (£45 & R. N. for Champion.<sup>2</sup>)—LORD ANNALY, Holdenby House, Northampton, for Thornby Linksman 145895, roan, born June 8, 1917, bred by Capt. A. S. Willis, Thornby Hall, Northampton; s. Drusus 115142, d. Dolphinlee Rosebud 8th by Dolphinlee Linksman 111546.
- 923 III. (£3.)—ITCHEN BREEDING STOCK FARM, LTD., Itchen Abbas, by Winchester for Kelmescott Conjuror 3rd 137209, red roan, born June 12, 1916, bred by R. W. Hobbs & Sons, Kelmescott, Lechlade, Glos.; s. Kelmescott Acrobat 4th 136217, d. Helpmate 15th by Kelmescott Turquin 105534.
- 927 IV. (£2.)—MR. & MRS. SCAMTON, Snelston Hall, Ashbourne, Derbyshire, for Snelston Royal 145535, red and a little white, born Dec. 13th, 1917; s. Royal Barrington 122574, d. Roan Fern by Milton 90098.
- 930 R. N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for Rockley Baron. H. C.—932. G.—921.

**Class 132.—Dairy Shorthorn Bulls, calved in 1918.** [17 entries.]

- 940 I. (£10.)—E. EZRA, Lock, Partridge Green, Sussex, for Proud Victor, roan, born June 24, bred by H. A. Brown, Croft House, Grendon, Atherstone; s. Kelmescott Conjuror 2nd 137298, d. Nottingham Princess (vol. 61, p. 806) by Lovely Chief 116383.
- 913 II. (£5.)—R. W. HOBBS & SONS, Kelmescott, Lechlade, Glos., for Kelmescott Juggler 8th, roan, born May 9; s. Trickster 4th 118058, d. Starlight 14th (vol. 58, p. 545) by Sheridan Beau 107101.
- 936 III. (£3.)—E. CAUDWELL, Rowsley, Derbyshire, for Grendon Double Barrington, light roan, born March 7, bred by H. A. Brown, Grendon, Atherstone; s. Barrington Snowstorm 2nd 121184, d. Barrington Welcome 2nd (vol. 59, p. 979) by Proud Waterloo 107155.
- 944 R. N.—LORD LILFORD, Lilford Hall, Barnwell, Peterborough, for Lilford Dairyman. H. C.—949. G.—935, 841, 940.

**Class 133.—Dairy Shorthorn Bulls, calved on or between January 1, 1919, and March 31, 1919.** [12 entries.]

- 952 I. (£10.)—CHIVERS & SONS, LTD., Histon, Cambs, for Histon Royal Prince, dark roan, born March 11; s. Royal Foggathorpe 133300, d. Wild Queen 27th (vol. 59, p. 976) by Danger Signal 108337.
- 961 II. (£5.)—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for Golden Ray, roan, born Jan. 16, bred by Capt. the Hon. E. A. FitzRoy, M.P., Fox Hill, West Haddon; s. Dandy 114984, d. Golden Maid (vol. 59, p. 532) by Golden Promise 102380.
- 959 III. (£3.)—JOHN A. WILLIS, Manor House, Carpenter, Yorkshire, for Royal Fern, dark roan, born Feb. 2; s. Major Stanley 137399, d. Carleton Queen 7th (vol. 59, p. 1076) by Bright Minican 104372.
- 957 IV. (£2.)—LT. COL. NORMAN PILKINGTON, D.S.O., Rainford Hall, St. Helena, Lancs, for Rainford Hall Mark, red, born March 30; s. Rainford Richmond 144706, d. Rainford Harp 3rd (vol. 62, p. 1025) by Royal Prince 117311.
- 958 E. N.—R. SILCOCK & SONS, Thornton Hall Farm, Poulton-le-Fylde, Lancs, for Fylde Referee 22nd. H. C.—953.

**Class 134.—Dairy Shorthorn Bulls, calved on or between April 1, 1919, and December 31, 1919.** [24 entries.]

- 963 I. (£10.)—SIR RICHARD C. GARTON, G.B.E., Lythe Hill, Haslemere, Surrey, for Arisford Barrington Duke, roan, born June 30, bred by E. C. Fairweather, Avisford Park, Arundel, Sussex; s. Apley Record Rosador 134653, d. Barrington Duchess 20th (vol. 59, p. 829) by Hadley Guardian 111068.
- 972 II. (£5.)—ALFRED PALMER, Wokefield Park, Mortimer, Berks, for Wokefield Advocate, red, born May 23; s. Kelmescott Acrobat 22nd 118170, d. Lemm 26th (vol. 63, p. 899) by Cranford Freemason 114883.
- 971 III. (£3.)—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for Leam Lancer, light roan, born June 8; s. Eaton Magna Charta 130802, d. Lilac 9th (vol. 62, p. 925) by Heirloom 120682.

<sup>1</sup> £20 towards these Prizes were given by the Dairy Shorthorn Association and £20 by the Shorthorn Society.

<sup>2</sup> Champion Prize of £10 given by the Dairy Shorthorn Association, for the best Bull in Classes 131-134.

# lxxvi *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 960 IV. (£2).—THE EARL OF DERBY, K.G., Knowsley, Prescott, Lancs., for **Knowsley Carol Dolphin**, white, born April 10; a **Presbute Dolphin** 127358 d. Stondon Carolina (vol. 53, p. 965) by **Eastures General** 116839.  
 973 V. (£2).—ALFRED PALMER, for **Wokefield Orange Boy**, roan, born June 13; a **Kelmscott Acrobat** 22nd 143170, d. **Orange 51st** (vol. 63, p. 899) by **Cranford Freemason** 11483.  
 965 R. N.—C. R. W. ADKANE, C.B., Babraham Hall, Cambridge, for **Babraham Peerless**, H. C.—970. C.—965, 183.

## **Class 135.—Dairy Shorthorn Cows (in-milk), calved in or before 1913.**

[26 entries.]

- 1005 I. (£10, & **Champion**.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for **Bare Charm** (vol. 60, p. 803), dark roan, born Nov. 20, 1913, calved June 9, 1920, bred by **Richard Hall**, Torrisholme Hall, Morecambe; a **Bare Style** 114137, d. **Morecambe Pearl** by **Shy Officer** 4th 103911.  
 1009 II. (£5).—JOHN A. WILLIS, Manor House, Carperby, Yorks., for **Carleton Queen 7th** (vol. 59, p. 1076), white, born April 15, 1912, calved June 6, 1920, bred by **John Wood**, The Beeches, Carleton, Carlisle; a **Bright Mimian** 101672, d. **Fairy Queen** by **Baron's Pride** 80435.  
 998 III. (£3).—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for **Bright Aster** (vol. 59, p. 594), light roan, born Jan. 16, 1910, calved May 31, 1920, bred by **R. Capstick**, Bramshaw, Sedburgh, Yorks.; a **Electron** 65077, d. **Aster 4th** by **Baron Clarence** 82788.  
 986 IV. (£2).—MAJOR G. J. BUXTON, Tockenham Manor, Wootton Bassett, Wilts., for **Castel Maid** (vol. 58, p. 829), roan, born April 7, 1911, calved June 13, 1920, bred by **T. Park**, Castel Bank, Grayrigg, Westmorland; a **Favourite Boy** 98415, d. **Crosby 7th** by **San Francisco** 84806.  
 990 V. (£2).—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, Kent, for **Crudwell Milky Walton** (vol. 95, p. 128), roan, born Nov. 25, 1912, calved March 11, 1920, bred by **J. H. Large**, Crudwell Manor, Malmesbury; a **Forest Duke** 106653, d. **Milky Walton** by **Master Wren** 96365.  
 989 R. N.—A. R. FISH, Holme Mead, Hutton, near Preston, for **Lady Ruby 2nd**, H. C.—692. C.—1001.

## **Class 136.—Dairy Shorthorn Cows (in-milk), calved in 1914 or 1915.**

[19 entries.]

- 1020 I. (£10, & **R. N. for Champion**.)—J. MOFFATT, Spital, Kendal, for **Watercrock Cress 2nd** (vol. 62, p. 962), light roan, born July 15, 1915, calved June 11, 1920; a **Lord Nottingham** 116317, d. **Cressida 45th** by **Clipper Duke** 105045.  
 1013 II. (£5).—E. A. BROWN, Grendon, Atheistone, Warwickshire, for **Johnny Rose 15th** (vol. 61, p. 1124), red, born Sept. 2, 1914, calved May 23, 1920, bred by **T. W. Workman**, Carleton, Carlisle; a **County Squire** 111410, d. **Johnny Rose 11th** by **Bouncing Boy** 94395.  
 1024 III. (£3).—F. H. THORNTON, Kingsthorpe Hall, Northampton, for **Fairy Duchess 15th** (vol. 61, p. 776), red and little white, born Nov. 17, 1914, calved May 23, 1920, bred by **G. Watkins**, Biggin Grange, Oundle; a **Lord Crankley 2nd** 112354, d. **Fairy Duchess 11th** by **Royal Greywine** 103700.  
 1015 IV. (£2).—F. CALVERT BUTLER, Greenlands Farm, Carnforth, for **Knowsfield Duchess of Geneva 6th** (vol. 61, p. 571), roan, born Feb. 30, 1914, calved June 9, 1920, bred by **A. Adamson**, Springs Farm, Keswick; a **Daisy's Pride** 111461, d. **Knowsfield Duchess of Geneva 5th** by **Red Pearl** 96687.  
 1017 V. (£2).—CAPT. TH. HON. E. A. FITZROY, M.P., Fox Hill, West Haddon, Rugby, for **Lady Nottingham 22th** (vol. 61, p. 936), roan, born April 25, 1914, calved June 2, 1920, bred by **A. Hutson**, Hawkrigg House, Wigton; a **Dairy Ingram** 105184, d. **Lady Nottingham 14** by **York Rose** 93850.  
 1029 R. N.—CAPT. H. FITZHERBERT, Yeldersley Hall, Ashbourne, Derbyshire, for **Yeldersley Red Rose 4th**, H. C.—1027. C.—1019.

## **Class 137.—Dairy Shorthorn Cows (in-milk), calved in 1916. [37 entries.]**

- 1045 I. (£10).—R. W. HOBBS & SONS, Kelmscott, Lechlade, for **Nottingham Heiress** (vol. 64, p. 1475), roan, born Feb. 12, calved April 28, 1920, bred by the late **Lord Lucas**, Wreast Park, Amnithill, Beds.; a **Heirloom** 120662, d. **Lady Nottingham 16th** by **Abbotsford 5th** 75941.  
 1060 II. (£5).—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for **Proud Duchess** (vol. 63, p. 1015), dark roan, born Feb. 1, calved June 4, 1920, bred by **J. Moffat**, Spital, Kendal; a **Proud Prince** 127480, d. **Fanciful** by **Curlew Bell** 105177.  
 1046 III. (£3).—W. G. MILLAR, Bampton, Oxon, for **Grace Darling** (vol. 63, p. 645), red, born Aug. 3, calved April 22, 1920, bred by **T. Bainbridge**, Carnforth, Lancs.; a **Royal Briton** 127369, d. **Graceful Princess** by **Mealsgate Knight** 103772.

<sup>1</sup> Champion Prize of £10 given by the Shorthorn Society for the best Cow or Heifer in Classes 135-138. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Dairy Shorthorn Cow.

## Award of Live Stock Prizes at Darlington, 1920. lxxvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1041 IV. (£2).—A. R. FISH, Holme Mead, Hutton, Preston, for **Combebank Rosamond** (vol. 63, p. 1017), dark roan, born Sept. 9, calved June 13, 1920, bred by Robert L. Mond, Sundridge, Sevenoaks, Kent; a Foundation Stone 105624, d. Fair Rosamond by Sub Inspector 100618.
- 1061 V. (£2).—VISCOUNT WIMBORNE, for **Watercress 3rd** (vol. 63, p. 1016), roan, born June 29, calved June 17, 1920, bred by J. Moffat, Spital, Kendal; a Royal Prince 127937, d. Cressida 45th by Clipper Duke 105045.
- 1048 R. N.—ALFRED PALMER, Wokedale Park, Mortimer, Berks., for **Orange 51st**. H.C.—1049. C.—1038.

### Class 138.—Dairy Shorthorn Heifers (in-milk), calved in 1917.

[28 entries.]

- 1087 I. (£10).—CAPT. ARNOLD S. WILLS, Thornby Hall, Northampton, for **Thornby Foggathorpe 7th** (vol. 65, p. 1321), white, born June 3, calved before the Show; s. Drusus 115142, d. Thornby Foggathorpe 2nd by Dreadnought 102049.
- 1089 II. (£5).—HERBERT H. GWTAM, Newland Hall, Lancaster, for **Newland Lottie 11th** (vol. 64, p. 1183), roan, born March 24, calved June 2, 1920; s. Mayflower Boy 116518, d. Newland Lottie 5th by Babraham Emperor Bates 97893.
- 1074 III. (£3).—R. W. HOBBS & SONS, Kelmscott, Lechlade, for **Darling 36th** (vol. 64, p. 981), roan, born Sept. 14, calved May 15, 1920; s. Dairy Prince 114977, d. Darling 35th by Tri-kster 4th 118058.
- 1079 IV. (£2).—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for **Daphne** (vol. 64, p. 1164), roan, born July 15, calved May 15, 1920; s. Premier Gift 12726, d. Doreen by Foundation Stone 105224.
- 1078 V. (£2).—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, for **Combe Bank Ringlet** (vol. 64, p. 1121), light roan, born May 23, calved June 1, 1920; s. Foundation Stone 105624, d. Hadnock Ringlet 57th by Dean Prince 111483.
- 1076 R. N.—ROBERT DUNNING HOLT, High Borrens, Windermere, for **Beaumont Seraph**. H.C.—1086. C.—1063 1070, 1089.
- 943, 1043, 1074 (Cup. 1).—R. W. HOBBS & SONS, for **Kelmscott Jester 2nd**, Nottingham Heiress, and **Darling 36th**.
- 971, 978, 1079 (R. N. for Cup. 1).—OLYMPIA AGRICULTURAL COMPANY, LTD., for **Leam Lancer**, **Bright Aster**, and **Daphne**.
- 982, 983, 1012, 1043, 1065 (Cup. 2).—C. R. W. ADEANE, C.B., for **Babraham Christopher 2nd**, **Babraham Peerless**, **Babraham Diligent**, **Babraham Lady Combine**, and **Babraham Lady Thorndale**.

## Non-Pedigree Dairy Shorthorns.

### Class 139.—Non-Pedigree Shorthorn Dairy Cows (in-milk).

[2 entries: both absent.]

### Class 140.—Non-Pedigree Dairy Shorthorn Heifers (in-milk), calved in 1917.

[No entry.]

## Lincolnshire Red Shorthorns.<sup>3</sup>

### Class 141.—Lincolnshire Red Shorthorn Bulls, calved in or before 1917.

[7 entries.]

- 1098 I. (£10 & Champion.<sup>4</sup>)—MRS. M. M. WEBB & SONS, Melton Ross, Barnethy, Lincs., for **Risby Dandy 13738**, born Jan. 6, 1917, bred by Harry Abraham, Risby Manor, Tealby, Lincoln; s. Bonby Emperor 6693, d. Normanby Milkmaid 2nd by Scampton Lucitanus 7875.

<sup>1</sup> Silver Challenge Cup, value 50 guineas, given through the Dairy Shorthorn Association for the best group of one Bull and two Cows or Heifers in Classes 131-138. Two at least of the animals must have been bred by the Exhibitor.

<sup>2</sup> Perpetual Challenge Cup, value 50 guineas, given through the Dairy Shorthorn Association, for the best 5 animals (of which not more than two shall be bulls) by the same sire entered in Classes 131-138.

<sup>3</sup> £20 towards these Prizes were given by the Lincolnshire Red Shorthorn Association.

<sup>4</sup> Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Bull in Classes 141-143.

# lxxviii Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor.

1094 II. (£5.)—ANCELL B. HOLT, Home Farm, Sturton, Brigg, Lincolnshire, for *Grainthorpe Magnum* 13499, born April 4, 1917, bred by Col. H. T. Fenwick, Sea Farm, Grainthorpe, S.O., Lincolnshire; s. Scampton Marquis 8514, d. Grainthorpe Rose by Jubilant 9230 C.H.B.

1095 III. (£3.)—GEORGE MARRIS, Kirmington, Brocklesby, Lincs. for *Kirmington Excursionist* 1313 11689, born July 7, 1914; s. Scampton Excursionist 4088, d. Kirmington Rose 31st by Scampton Forester 4557.

1095 R. N.—A. PRESTON JONES, Mickleover House, Derby, for *Scampton Recruit*. H.C.—1097.

**Class 142.—Lincolnshire Red Shorthorn Bulls, calved in 1918.** [5 entries.]

1102 I. (£10, & R. N. for Champion.)—ANCELL B. HOLT, Home Farm, Sturton, Brigg, Lincolnshire, for *Kirmington Quality* 15582, born Jan. 30, bred by George Marris, Kirmington, Brocklesby, Lincs; s. Scampton Quality 11912, d. Scampton Rose by Brandon Grenadier 4771.

1101 II. (£5.)—JOHN KENNETH FOSTER, Coombe Park, Whitechurch, Oxon, for *Kirmington Ruby King* 44th 15584, born May 2, bred by George Marris, Kirmington, Brocklesby, Lincs; s. Scampton King of the Rubies 7122, d. Kirmington Rose 1st by Kirmington Wandering Chief 6182.

1100 III. (£3.)—JOHN EVENS & SON, Burton, near Lincoln, for *Kirmington Ruby King* 56th, born Aug. 4, bred by George Marris, Kirmington, Brocklesby, Lincs; s. Kirmington Ruby King 21st 11075, d. Kirmington Molly (vol. 23, p. 391) by Scrubby Red Coat 1st 5947.

1099 R. N.—MAJOR H. COOPER, Flawborough, Orston, Notts, for *Flawborough Surprise*.

**Class 143.—Lincolnshire Red Shorthorn Bulls, calved in 1919.** [6 entries.]

1107 I. (£10.)—O. W. PORRITT, Helmshaw, Manchester, for *Pendley Ruby Magnet*, born July 13, bred by the Pendley Stock Farms, Tint; s. Scampton Quality 11912, d. Saltfleet Ruby 20th by Blucher of Wick 9490 C. H. B.

1104 II. (£5.)—C. DE PARAVICINI, St. Vincent's, Grantham, for *Beacon Hill Poils*, born May 10; s. Croxton Ruby 63rd 11492, d. Beacon Hill Harlaxton by Scampton Judge 8327.

1106 III. (£3.)—J. H. ROBINSON, Bank House, Anderby, Alford, Lincs. for *Anderby Record*, born May 12; s. Pendley Red Coat 13747, d. Anderby No. 363 by Bilsby Indomitable 11th 3768.

1106 R. N.—JOHN KENNETH FOSTER, Coombe Park, Whitechurch, Oxon, for *Kirmington Coombe Ruby King*.

**Class 144.—Lincolnshire Red Shorthorn Cows (in-milk), calved in or before 1916.** [10 entries.]

1116 I. (£10.)—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for *Burton Cork* 15th (vol. 22, p. 349), born April 14, 1913, calved May 19, 1920, bred by John Evens & Son, Burton, Lincoln; s. Burton Excellence 7306, d. Burton Cork 10th by Mr. Cherry 8311.

1119 II. (£5.)—LT.-COL. SIR A. G. WEIGALL, K.C.M.G., Petwood, Woodhall Spa, Lincs, for *Sudbrook 128c*, born June 28, 1914, calved March 28, 1920, bred by Fred. Scorer, Sudbrook, nr. Lincoln; s. Pendley Sudbrook Pearl 7808, d. Bracebridge 161B (vol. 15, p. 337) by Bracebridge Walker 4710.

1112 III. (£3.)—JOHN EVENS & SON, Burton, near Lincoln, for *Burton Cherry* 3rd (vol. 23, p. 286), born Oct. 6, 1914, calved May 4, 1920, bred by John Evens; s. Burton Fulnetby 9634, d. Burton Cherry Blossom by Burton Challenger 2nd 4723.

1117 R. N.—COL. J. GRETTON, M.P., for *Kirdistown Phoebe* 10th.

H.C.—1110, 1114.

**Class 145.—Lincolnshire Red Shorthorn Cows or Heifers (in-milk), calved in or before 1917, showing the best milking properties.** [12 entries.]

1126 I. (£10.)—JOHN EVENS & SON, Burton, near Lincoln, for *Burton Filppail* 3rd (vol. 21, p. 299), born Jan. 31, 1912, calved May 27, 1920, bred by John Evens; s. Hermit 102484, d. Burton Filppail 2nd (vol. 18, p. 263).

1127 II. (£5.)—JOHN EVENS & SON, for *Burton Fillingham* (vol. 25, p. 329), born April 30, 1915, calved May 21, 1921, bred by G. E. Jarvis, Doddington, Lincoln; s. Hainton Kitchener 11590, d. Fillington by Digby Bean 1st 8834.

1122 III. (£3.)—STANLEY BLUNDELL, Bendish House, Welwyn, Herts., for *Bendish Marcia* 2nd (vol. 21, p. 282), born Aug. 27, 1914, calved May 26, 1920; s. Bracebridge Prince 2nd 7364, d. Bendish Marcia by Crimson Boy 4772.

1120 R. N.—ARTHUR BARBER, Grove Grange, Retford, for *Retford Dairymaid*. H.C.—1123, 1124, 1125. G.—1150.

<sup>1</sup> Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Bull in Classes 141-143.

## Award of Live Stock Prizes at Darlington, 1920. lxxix

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 146.—*Lincolnshire Red Shorthorn Heifers (in-milk), calved in 1917.* [3 entries.]

- 1134 I. (£10, & R.N. for Champion.)—MAJOR T. JESSOP, Harrington Hall, Spilsby, Lincs., for *Pendley Martha*, (vol. 24, p. 452), born March 10, calved Dec. 5, 1918, bred by G. E. Saunders, Scampton, Lincoln; s. Scampton Quality 11912, d. by Keddington Searchlight 4883.  
1135 II. (£5.)—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for *Stapleford Dairy Girl* (vol. 24, p. 365), born March 16, calved May 11, 1920; s. Wooton Artic 10399, d. Stapleford Dairy Maid by Stapleford Ranger 2nd 4990.  
1136 III. (£3.)—ARTHUR BARBER, Grove Grange, Retford, for *Retford Quality 2nd* (vol. 24, p. 365), born Sept. 4, calved May 18, 1920; s. Anderby Pockham 78553, d. Retford Quality (vol. 24, p. 310) by Saleby Excursionist 2nd 7102.

### Class 147.—*Lincolnshire Red Shorthorn Heifers, calved in 1918.* [4 entries.]

- 1137 I. (£10, & Champion.)—MAJOR H. COOPER, Flawborough, Orston, Notts., for *Flawborough Nancy*, born July 11; s. Flawborough Chieftain 12318, d. Flawborough Priceless by High Tolinton Coronation 8332.  
1138 II. (£5.)—C. DE PARAVICINI, St. Vincents, Grantham, for *Saltfleet Fancy*, born Nov. 3, bred by T. Freshney, Grainthorpe House, Grainthorpe, Lincs.; s. Oroton Ruby 50th 9835, d. by Sheddington Comet 3443.  
1139 III. (£3.)—JOHN KENNETH FOSTER, Coumbe Park, Whitchurch, Oxon., for *Pendley Treasure 2nd* (vol. 25, p. 408), born May 3, bred by J. G. Williams, Pendley Manor, Tring; s. Scampton Marvel 8517, d. Donnington Prima Donna 6th by Willoughby Artilleryman 8027.  
1140 R. N.—MAJOR T. JESSOP, Harrington Hall, Spilsby, Lincs., for *Pendley Rosetta*.

### Class 148.—*Lincolnshire Red Shorthorn Heifers, calved in 1919.* [13 entries.]

- 1141 I. (£10.)—MAJOR H. COOPER, Flawborough, Orston, Notts., for *Flawborough Lassi* (vol. 26), born Jan. 3; s. Flawborough Chieftain 12518, d. Flawborough Fanny by Blusterer 10157 C.H.B.  
1142 II. (£5.)—LT.-COL. SIR A. G. WEIGALL, K.C.M.G., Petwood, Woodhall Spa, Lincs., for *Croxyby Empress* (vol. 26), born April 4, bred by C. W. Tindall, Wainfleet, Lincs.; s. Tealby No. 333 14000, d. Empress 11th by Vaulter 11817 C.H.B.  
1143 III. (£3.)—T. H. B. FRESHNEY, Worley, Brigg, for *Saltfleet Rosetta*, born May 16, bred by the Pendley Stock Farms, Tring; s. Scampton Quality 11912, d. Scampton Rosetta by Brandon Grenadier 4271.  
1144 R. N.—T. H. B. FRESHNEY, for *Saltfleet Red Rose*.  
H. C.—1143, 1145.

## Herefords.<sup>2</sup>

### Class 149.—*Hereford Bulls, calved in or before 1917.* [6 entries.]

- 1157 I. (£10, & Champion.)—T. ROE THOMPSON, Bean House Farm, Cradley, Malvern, for *Resolute 35337*, born Jan. 15, 1917, bred by S. Robinson, Lynnhales, Kington, Herefordshire; s. Ringer 31920, d. Orange 11th by Gainsborough 23035.  
1158 II. (£5 & R. N. for Champion.)—STEWART ROBINSON, The Ovals, Kington, Herefordshire, for *Mansel Handysman 35054*, born Jan. 11, 1918, bred by Capt R. T. Hinckes, Pooley, Hereford; s. Starlight 25754, d. Dame Hironelle by Eaton Pearl 26530.  
1159 III. (£3.)—P. & G. HUGHES, Gresty, Crewe, for *Actuary 34524*, born Jan. 27, 1917, bred by W. S. Russell, Westonbury, Pembridge; s. Renown, d. Lively by Taurus 25015.  
1160 R. N.—K. W. MILNES, The Field, Hereford, for *Squire Rougemont*.

### Class 150.—*Hereford Bulls, calved in 1918.* [17 entries.]

- 1161 I. (£10.)—SYDNEY PYMAN, Pigeon House Farm, Rose-on-Wye, Herefordshire, for *Premier*, born Jan. 7, bred by T. R. Thompson, Ruta, Stanwell Road, Penarth, Glam.; s. Premier 34190, d. Pina (vol. 46, p. 888) by Rougemont 2nd 27841.  
1162 II. (£5.)—JOHN WALKER, Knightwick Manor, Worcester, for *Twyford Garnet*, born February 1, bred by S. C. Hayter, Twyford, Pembridge; s. Ringer 31920, d. Dorothea (vol. 46, p. 554) by Xmas Gift 25882.

<sup>1</sup> Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Cow or Heifer in Classes 144-148.

<sup>2</sup> £50 towards these Prizes were given by the Hereford Herd Book Society.

<sup>3</sup> Champion Prize of £10 10s. given by the Hereford Herd Book Society for the best Bull in Classes 149-152.



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[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"

- 1167 III. (43).—CHARLES T. PULLEY, M.P., Lower Eaton, Hereford, for Eaton Jasper.  
36832, born Jan. 11; s. Eaton Felipe 32479, d. Claudine 2nd by Eaton Masterpiece  
25315.
- 1161 IV. (2).—LORD CAWLEY, Berrington Hall, Leominster, for Berrington Boy 35890,  
born Feb. 11; s. Carlos 24980, d. Conny by Weston Speculator 29453.
- 1158 R. N.—HIS MAJESTY THE KING, The Royal Farms, Windsor, for Sir Edward.  
H. C.—1172 1174. C.—1163 1162.

Class 151.—*Hereford Bulls, calved in January or February, 1919.*

[22 entries.]

- 1192 I. (c10.)-CAPTAIN B. T. HINCKES, Mansel Court, Mansel Lacey, Hereford, for  
Mansel Banner Master 37345, born Jan. 29; a Starlight 28754, a May Morning  
(vol. 48, p. 206) by Kismet 20167.
- 1197 II. (c5.)-K. W. MILNES, The Field, Hereford, for Larder 37148, born Jan. 7;  
Hermis 33802, d. Neekchar (vol. 37, p. 745) by Sir James 20469.
- 1176 III. (c10.)-P. S. HARRIS, The Grove, Tournai, Hereford, for Old Glory  
35570, born Jan. 17; a Goodenough 33160, d. Pipette by Lynch Trifler 30752.
- 1184 IV. (c2.)-P. & G. HUGHES, Gresty, Crowe, for Aldersand May King 35843, born  
Jan. 21, bred by William Griffiths, Aldersand, Tarrington, Hereford; a. Aldersand  
Wilton 34542, d. Mayflower (vol. 47, p. 380) by Starlight 28754.
- 1194 V. (c10.)-S. HARRIS, The Grove, Tournai, Hereford, for Shrewsbury, for Elyon  
King, born Jan. 13; a Prince Charming 29952, d. Madeline (a by Newstead 3081).
- 1190 R. N.-NEWMAN BROTHERS, Lower Wickton, Loominster, for Oyster King.  
H. C.-1180, 1185. C.-1188, 1193.

**Class 152.**—*Hereford Bulls, calved in 1919, on or after March 1.*

[10 entries.]

- 1201 I. (410).—WILLIAM GRIFFITHS, Aldersand, Tarrington, Hereford, for Aldersand  
Digger, born March 8; s. Subaltern 35354, d. Day Dream (vol. 45, p. 561) by Sir  
Bedivere 27228.
- 1206 II. (45).—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for Crossways  
\* Hampton, born March 9; s. Ringer 31920, d. Darling (vol. 47, p. 621) by Xmas  
Girl 25881.
- 1203 (414).—NEWMAN BROTHERS Lough Wicklow, Leominster, for Grenadier,  
born April 2; s. Patchwork 31099, d. Gipsy 7th by Primate 31849.  
H. C.—1204.

**Class 153.**—*Hereford Cows (in-milk), calved in or before 1916.* [8 entries.]

[8 entries.]

- 1209 **J. (410, & Champion, 1.)**—THE EARL OF COVENTRY, Croome Court, Worcester, for Garland, born Feb. 23, 1913; Calved Feb. 23, 1920; s. Ivington Bright 23830; d. Galopade 2nd (vol. 42, p. 381) by Maxwell 24155.
- 1208 **L. (45.)**—F. & F. B. BIRBY, Hardwick Grange, Shrewsbury, for Olive Polly 2nd, born Feb. 29, 1916; calved Apr. 3, 1922; s. Farraan Bawn 30564; d. Olive Violet 3rd (vol. 48, p. 413) by Coup de Ore 23016.
- 1210 **H.R. (436.)**—WALTER H. REEFER, Dean Park, Tenbury Wells, for Guelder Rose 2nd, born Feb. 23, 1916; calved May 11, 1920; s. Lord Clio 31693; d. Guelder Rose (vol. 44, p. 336) by Munner 25488.
- 1214 **R. N. — OWEN WILLIAMS**, Crossways, Cowbridge, for Christabel Pankhurst. H. C.—1212. C.—1207, 1213.

**Class 154.**—*Hereford Heifers (in-milk), calved in 1917.* [2 entries.]

[2 entries.]

- 1215 I. (£10).—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for *Holly Naney*, born Jan. 2, calved March 3, 1920, bred by J. Jones, Hollybush Farm, Cowbridge, Glam.; s. Remus 31913, d. Nancy (vol. 43, p. 257) by Aaron 25054.
- 1215 II. (£5).—WILLIAM JAMES PITT, The Albynes, Bridgnorth, Shrop., for *Damson*, born April 16, calved March 1, 1920; s. Newstead 30814, d. Newton Plum (vol. 45, p. 370) by Dorchester 26810.

Class 155.—*Hereford Heifers, calved in 1918.* [5 entries.]

[5 entries.]

- 1221 I. (c.10.)—A. W. TROTMAN, Langston Court, Newport, Mon, for *Rarity*, born Jan. 26, bred by the late Viscount Rhonda, Llanwrn Park, Newport; s. 8ir Sam 3331d. d. Rosalind by Golden Pheas 24633.
- 1218 II. (45.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury, for *Clive Spangle* 4th, born Feb. 7, s. Shucknall Prince 3312d, a *Clive Sparkle* 3rd (vol. 59, p. 300) by *Clive* 2nd.
- 1219 III. (45.)—WILLIAM HENRY BROWN CAVE, Wall End, Monkland, Leominster, for *Deborah*, born June 8, s. Doctor 3141d, d. *Dorinda* (vol. 49, p. 405) by Cross Belt 2747d.
- 1217 R. N.—F. & F. B. BIBBY, for *Clive Buttercup* 6th.

<sup>1</sup> Champion Prize of £10 10s. given by the Hereford Herd Book Society for the best Cow or Heifer in Classes 153-158.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- Class 156.**—*Hereford Heifers, calved in 1919.* [16 entries.]  
 1230 I. (£10, & R. N. for Champion.<sup>1</sup>)—K. W. MILNES, The Field, Hereford, for **Stanway Necklace** 6th, born Feb. 14; s. Hermit 32802, d. Stanway Necklace (vol. 45, p. 748) by Sir James 25489.  
 1237 II. (£5.)—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for **Crossways Yule Oyster**, born Jan. 1; s. Ringer 31920, d. Oyster Queen (vol. 48, p. 659) by Highland Prince 25437.  
 1238 III. (£3.)—OWEN WILLIAMS, for **Crossways Opal**, born Jan. 8; s. Ringer 31920, d. Sheepcote Opal (vol. 47, p. 626) by Milton 23571.  
 1239 IV. (£2.)—GEORGE HENRY DRUMMOND, Pittsford Hall, Northampton, for **Mystery**, born Jan. 12; s. Sir Sam 33131, d. Mermaid (vol. 43, p. 736) by Mariner 26168.  
 1235 R. N.—OWEN WILLIAMS, for **Crossways Eira**.  
 H. C.—1238, 1234. G.—1222, 1221.

### Devons.

- Class 157.**—*Devon Bulls, calved in or before 1918.* [5 entries.]  
 1239 I. (£10, & Champion.<sup>2</sup>)—H. R. H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for **Clampit Gay Laddie** 9187, born Nov. 30, 1915, bred by Wm. Brent, Clampit, Callington; s. Ford Plummer 7381, d. Clampit Gaiety 19288 by Yeoman 4338.  
 1238 II. (£5, & R. N. for Champion.<sup>3</sup>)—HIS MAJESTY THE KING, The Royal Farms, Windsor, for **Windsor Captain** 8325, born Feb. 21, 1913; s. Captain Masher 6034, d. Highfield Famous 3rd by Highfield Royal 5829.  
 1242 III. (£3.)—A. C. SKINNER & SON, Pound, Bishops Lydeard, for **Pound Larker**, 19282, born June 15, 1918; s. Shuteomb Admiral 7411, d. Pound Laurel 2nd 26723 by Loolinech Don 6443.  
 1241 R. N.—CHARLES MORRIS, Highfield Hall, St. Albans, for **Heatherton Pilot**.  
**Class 158.**—*Devon Bulls, calved in 1919.* [5 entries.]  
 1244 I. (£10.)—H. R. H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for **Oombohead Senator**, born Feb. 9; s. Clampit Gay Laddie 9197, d. Daisy 5th 24036 by Stockleigh Magnum Bonum 4217.  
 1246 II. (£5.)—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Supertaxpayer**, born Feb. 8; s. Highfield Hero 2nd 9332, d. Highfield Shaggy 5th 26931 by Capton Bellringer 4911.  
 1245 III. (£3.)—CHARLES MORRIS, for **Brickley Fairfax**, born Feb. 9, bred by Samuel Kidner, Bickley, Milverton, Somerset; s. Highfield Gem 3rd 9640, d. Goldfinder's Stuckey 23942, by Stockleigh Goldfinder 7283.

**Class 159.**—*Devon Cows or Heifers (in-milk), calved in or before 1917.*

- [3 entries.]  
 1250 I. (£10, & R. N. for Champion.<sup>3</sup>)—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Farthing** 8th 26398, born Dec. 26, 1916, calved Jan. 16th, 1920; s. Highfield General 8105, d. Highfield Farthing 5th 26925 by Capton Bellringer 4911.  
 1249 II. (£5.)—CHARLES MORRIS, for **Highfield Darkie** 5th 28570, born Aug. 6, 1915, calved April 11, 1920; s. Holcombe Reminder 7413, d. Darkie 5th 23716 by Combe Lord 5161.

**Class 160.**—*Devon Dairy Cows or Heifers (in-milk), calved in or before 1917.*<sup>4</sup>

- [11 entries.]  
 1259 I. (£10.)—R. A. CLARKE & SONS, Manor Farm, Chisellborough, Stoke-under-Ham, Somerset, for **Maudie Royal** 24053, born Mar. 27, 1911, calved June 6, 1920; s. Woodlands Milkman 6891, d. Maudie C. 90, by Morning Star 4639.  
 1255 II. (£5.)—JOHN H. CHICK, Wynford Eagle, Dorchester, for **Wynford Pill C.** 292, born July 23, 1913, calved May 21, 1920; s. Compton Moses 7015, d. Wynford Pill 1st B 553 by Compton Rattler 3369.  
 1251 III. (£3.)—W. G. BUSK, Wrexall Manor, Dorchester, for **Suffragette 1st** 2651, red, born Feb. 1, 1913, calved May 27, 1920, bred by A. Clarke, Chisellborough, Somerset; s. Rainbow Goodman 6883, d. Suffragette.  
 1260 R. N.—ALFRED T. LOHAM, Rosamondford, Aylesbeare, Devon, for **Landlady**.  
 H. C.—1262. G.—1268.

**Class 161.**—*Devon Heifers, calved in 1918.* [3 entries.]

- 1263 I. (£10, & Champion.<sup>4</sup>)—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Belle** 3rd 31244, born Feb. 1; s. Highfield Advance 8918, d. Highfield Belle 2nd 28562 by Holcombe Reminder 7413.

<sup>1</sup> Champion Prize of £10 10s. given by the Hereford Herd Book Society for the best Cow or Heifer in Classes 153-156.

<sup>2</sup> Champion Prize of £10 10s. given by the Devon Cattle Breeders' Society for the best Bull in Classes 157 and 158, entered or eligible for entry in the Devon Herd Book.

<sup>3</sup> Champion Prize of £10 10s. given by the Devon Cattle Breeders' Society for the best Cow or Heifer in Classes 159-162, entered or eligible for entry in the Devon Herd Book.

<sup>4</sup> Prizes given by the Devon Cattle Breeders' Society.

## lxxxii Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1264 II. (£5.)—ALFRED POPE, Henstill, Sandford, Crediton, Devon, for *Sandford Curly* 8th, born Jan. 18; s. Barum Duke 8355, d. Sandford Curly 20868 by Bickham Boy 3rd 4531.

1263 III. (£3.)—CHARLES MORRIS, for *Highfield Dizzy* 31250, born March 28; s. Woodland's Goldsmith 9528, d. Dorset Dizzy 28910 by Wyndthorpe Woodrough 6599.

Class 162.—*Devon Heifers, calved in 1919.* [3 entries.]

1267 I. (£10.)—MRS. A. C. SKINNER & SON, Pound, Bishops Lydeard, for *Pound Duchess* 13th, born Jan. 30; s. Highfield Gem 3rd 9690, d. Pound Duchess 12th 2858 by Dairyman 7040.

1266 II. (£5.)—CHARLES MORRIS, Highfield Hall, St. Albans, for *Highfield Hetty* 32178, born Jan. 3; s. Highfield Gem 2nd 9329, d. Pound Hetty 3rd 28561, by Dairyman 7040.

### South Devons.<sup>1</sup>

Class 163.—*South Devon Bulls, calved in or before 1918.* [5 entries.]

1272 I. (£10, & Champion.)—BEN LUSCOMBE, Bowden, Yealmlton, for *Bowden Strawberry Boy* 6968, born Jan. 1, 1917; s. Coarswell Yellow Boy 4014, d. Strawberry 2nd 1741.

1270 II. (£5.)—W. L. HOSKING & SONS, Fentongollan, Merther, Probus, Cornwall, for *Falston Ruler* 5548, born April 8, 1914, bred by J. W. Wakcham & Sons, Falston, South Brent, Devon; s. Young Duke 3958, d. Neil 2nd 1340 by McKinley 2705.

1268 III. (£3.)—CAPT. H. R. FOX, South Battsborough, Ht. (beton), Plymouth, for *Bulleigh Captain* 5331, born Dec. 11, 1914, bred by T. Willing, Bulleigh, Barton, Ippelen, Newton Abbott; s. Pamflete Perfection 2nd 4514, d. Cherry 11275 by Friendship 2614.

Class 164.—*South Devon Bulls, calved in 1919.* [6 entries.]

1277 I. (£10.)—LT. COL. THE RT. HON. F. B. MILDMAY, M.P., Flete, Ivybridge, for *Lilly's Champion* 8589, born Jan. 13; s. Warrior 629, d. Lilly 7th 13501 by Bickham Beauty 4280.

1276 II. (£5.)—BEN LUSCOMBE, Bowden, Yealmlton, for *Bowden Countess King* 5324, born Feb. 18; s. Bowden Cherry King 2nd 5306, d. Countess 11032.

1273 III. (£3.)—J. SPARROW WROTH & SONS, Coombe, Aveton Gifford, South Devon, for *Norseman* 6672, born April 29; s. Chancellor 7029, d. Nosegay 7th 13551 by Silver Royal 2711.

Class 165.—*South Devon Cows or Heifers (in-milk), calved in or before 1917.* [7 entries.]

1279 I. (£10, & R. N. for Champion.)—DAVID CAMP & SONS, Widland, Modbury, Devon, for *Buttercup* 5th 11777, born Sept. 27, 1912, calved March 14, 1920, bred by T. W. Luscombe, Gt. Englebourne, Totnes; s. Rew Rentpayer 3548, d. Buttercup 6th 7886 by Yarn-Yarn 3352.

1280 II. (£5.)—R. & H. CHAFFE, Worswell, Barton, Revel-stoke, Plymouth, for *Worswell Phillis* 13667, born Nov. 29, 1914, calved Nov. 30, 1919; s. Pamflete Dairyman 4309, d. Worswell Primrose Girl 11883 by Peter the Piper 3842.

1281 III. (£3.)—JOHN COAKER, Blagdon Barton, Paignton, Devon, for *Primrose* 11111, born April 12, 1911, calved Jan. 16, 1920, bred by John S. Smerdon, Darlington, Barton, Totnes; s. King of Hearts 2402, d. Prettymaid 6030 by Duke of York 1433.

Class 166.—*South Devon Heifers, calved in 1918.* [4 entries.]

1286 I. (£10.)—LT. COL. THE RT. HON. F. B. MILDMAY, M.P., Flete, Ivybridge, for *Lilian Favourite* 20112, born Sept. 14; s. Warrior 629, d. Lilian 10164 by Henry 8th 3179.

1287 II. (£5.)—ROBERT SHINNER, Sketchford, Buckfastleigh, Devon, for *Alice* 20607, born May 14; s. Molenick Monarch 4979, d. Careless 15664 by Well Bred 4647.

1289 III. (£3.)—J. SPARROW WROTH & SONS, Coombe, Aveton Gifford, Devon, for *Snowball* 20891, born Feb. 9; s. Widland Perfection 5217, d. Sylvia 8th 14677 by Silver Royal 2711.

Class 167.—*South Devon Heifers, calved in 1919.* [5 entries.]

1290 I. (£10.)—R. & H. CHAFFE, Worswell, Barton, Revel-stoke, Plymouth, for *Worswell Gladys* 11th, born July 21; s. Widland Champion 6874, d. Worswell Gladys 4th 13623 by Merfield Royal Star 4102.

1292 II. (£5.)—LT. COL. THE RT. HON. F. B. MILDMAY, M.P., Flete, Ivybridge, for *Lilly* 10th 21804, born Jan. 11; s. Lilian Champion 6016, d. Lilly 6th 12862 by Bulleigh Prince 3108.

1291 III. (£3.)—JAMES ISMAY, Iwerne Minster, Blandford, for *Iwerne Milkmaid*, 21606, born Aug. 17; s. Councillor 12th 4828, d. Countess 7th 16863.

<sup>1</sup> £20 towards these Prizes were given by the South Devon Herd Book Society.

<sup>2</sup> Silver Challenge Cup, value £20, given through the South Devon Herd Book Society, for the best Animal in Classes 163-167.

## Award of Live Stock Prizes at Darlington, 1920. lxxxiii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Longhorns.<sup>1</sup>

**Class 168.—Longhorn Bulls, calved in or before 1918.** [2 entries.]  
 1296 I. (£10, & Champion<sup>2</sup>.)—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for Whitacre Venture 2nd 754, brindle and white, born June 12, 1915; s. April Fool 634, d. Stivichall Doreen by Susan's Son 515.

**Class 169.—Longhorn Bulls, calved in 1919.** [4 entries.]  
 1300 I. (£10, & R. N. for Champion<sup>3</sup>.)—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for Whitacre Venturesome, brindle and white, born May 4; s. Whitacre Venture 754, d. Lady Agatha 5th of Kent (vol. 10, p. 21) by Eastwell Eagle 500.  
 1297 II. (£5.)—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for Putley Rex, red brindle and white, born April 25; s. Croft Captain 730, d. Putley Rudbeckia (vol. 10, p. 24) by Poles Czar 685.  
 1298 III. (£3.)—W. HANSON SALE, Arden Hill, Altherstone, for Arden Re-union, red and white, born May 26; s. Controller of Kent 768, d. Arden Ermine by Arden King Maker 645.

1299 E. N.—J. W. SWINNERTON-WESTON, for Whitacre Guard.

**Class 170.—Longhorn Cows or Heifers (in-milk), calved in or before 1917.** [4 entries.]

1305 I. (£10, & R. N. for Champion<sup>4</sup>.)—W. E. SWINNERTON, Manor House, Over Whitacre, Birmingham, for Stivichall Doreen 3rd, brindle and white, born May 2, 1917, calved June 19, 1920; s. April Fool 634, d. Stivichall Doreen 2nd (vol. 9, p. 63) by Eastwell Exact 733.  
 1301 II. (£5.)—W. HANSON SALE, Arden Hill, Atherstone, for Arden Cinderella, red brindle and white, born June 17, 1916, calved May 10, 1920; s. Arden King Maker 645, d. Arden Lady Panza (vol. 8, p. 44) by Putley Hay Lad 548.  
 1302 III. (£3.)—W. HANSON SALE, for Grace 15th, dark brindle and white, born July 4, 1915, calved June 29, 1920; s. Stowe Marston 708, d. Grace 13th (vol. 7, p. 47) by Westmeath Boy 433.  
 1304 E. N.—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for Arbury Rosebud.

**Class 171.—Longhorn Heifers, calved in 1918 or 1919.** [1 entry.]

1305 I. (£10, & Champion<sup>5</sup>.)—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for Putley Dianthus 2nd, red brindle and white, born Aug. 2, 1918; s. Croft Captain 730, d. Putley Dianthus (vol. 9, p. 51) by Waddon Friar 552.

### Sussex.<sup>4</sup>

**Class 172.—Sussex Bulls, calved in or before 1918.** [5 entries.]  
 1308 I. (£10, & Champion<sup>6</sup>.)—GEORGE T. EATON, Thurston Hall, Framfield, Sussex, for Brownings Miller 27th, born Jan. 18, 1918, bred by James Groves, Brownings Manor, Blackboys, Sussex; s. Brownings Miller 6th 3883, d. Brownings Crystal 1st by Aspley Albert 2nd 2706.

1306 II. (£5.)—G. R. BENNETT, Old House Farm, West Hoathly, Sussex, for Newick Bandsman 2nd 4785, born Jan. 9, 1918, bred by the Rev. F. S. Slater, Newick Park, Lewes, Sussex; s. Petworth Gold dust 4170, d. Musical 11405 by Lord Eric 1990.  
 1308 III. (£3.)—H. S. GRAVES, Cinder Farm House, Chaleys, Lewes, for St. Albans 39th 4401, born Jan. 10, 1917, bred by Col. W. W. Hammond, St. Albans Court, Nonnington, Dover; s. Old Place Gold 2nd 2920, d. Sylph 45th 1490 by K.C. 2523.  
 1307 E. N.—J. RAYNER BETTS, Greenhill, Otham, Maidstone, for Ockham Noble.

**Class 173.—Sussex Bulls, calved in 1919.** [7 entries.]  
 1313 I. (£10, & R. N. for Champion<sup>7</sup>.)—GEORGE T. EATON, Thurston Hall, Framfield, Sussex, for Brownings King, born Jan. 1, bred by James Groves, Brownings Manor, Blackboys, Sussex; s. St. Albans 39th 4401, d. Brownings Galatea 1st 16262 by Lock Miller 2nd 2994.

1311 II. (£5.)—G. R. BENNETT, Old House Farm, West Hoathly, Sussex, for Ridge Geoffrey 2nd, born April 13; s. St. Albans Prebble 7th 4157, d. Lock Darkey 6th 15295 by Prince of Lock 2nd 2499.

<sup>1</sup> £20 towards these Prizes were given by the Longhorn Cattle Society.  
<sup>2</sup> Perpetual Silver Challenge Cup, value £15, given by the Longhorn Cattle Society for the best Bull or Cow in Classes 168 and 170.

<sup>3</sup> Silver Challenge Cup, value £15, given through the Longhorn Cattle Society for the best Bull or Heifer in Classes 169 and 171.

<sup>4</sup> £20 towards these Prizes were given by the Sussex Herd Book Society.

<sup>5</sup> Champion Silver Medal given by the Sussex Herd Book Society for the best Bull in Classes 172 and 173.

# lxxxiv *Award of Live Stock Prizes at Darlington, 1920.*

Unless otherwise stated, each prize animal named below was "bred by exhibitor."

- 1314 III. (£3).—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for *Avisford Delight*, born April 8, bred by Percy L. Nevill, Birling Manor, West Malling, Kent; s. *Birling Delight* 3731, d. *Birling Pea* 2nd 15142, by *Posingworth Broadguage* 2508.

## **Class 174.—Sussex Cows or Heifers (in-milk), calved in or before 1917.** [3 entries.]

- 1318 I. (£10, & Champion.)—GEORGE T. EATON, Thurston Hall, Framfield, Sussex, for *Brownings Stonesdown* 1st 6230, born April 12, 1915, calved March 9, 1920, bred by James Groves Brownings Manor, Blackboys, Sussex; s. *The Beau*, 2546, d. *Tutsham Stonesdown* 6th 13667 by *Tutsham Beagle* 2827.  
1319 II. (£5).—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for *Lock Betsy* 8th 12693, born March 17, 1914, calved Jan. 17, 1920, bred by W. A. Thornton, Lock Partridge Green, Sussex; s. *North Chapel Premier* 2645, d. *Lock Betsy* 2nd 13827 by *Tutsham Torador* 2018.  
1320 III. (£3).—MAJOR ELMER SPEED, Knowlton Court, Canterbury, for *Birling Careful* 3rd 13868, born Jan. 21, 1911, calved Jan. 31, 1920, bred by Percy L. Nevill, Birling Manor, West Malling, Kent; s. *Mayfield Guy* 2484, d. *Birling Careful* 11504 by *Paley Major* 2659.

## **Class 175.—Sussex Heifers, calved in 1918.** [2 entries.]

- 1321 I. (£10, & R. N. for Champion.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for *Lock Darkey* 2th, born Jan. 10, bred by W. A. Thornton, Lock Partridge Green, Sussex; s. *Birling Geoffrey* 2nd 4252, d. *Lock Darkey* 11th 15888 by *Prince of Lock* 2nd 2498.  
1322 II. (£5).—ALFRED PALMER, West Park, Lingfield, Surrey, for *Bounty*, born March 22, bred by Joseph Godman, Park Hatch, Godalming; s. *Lock Rufus* 3995, d. *Donfire* 49th 15549 by *Shillinglee Gold* 8th 2548.

## **Class 176.—Sussex Heifers, calved in 1919.** [3 entries.]

- 1323 I. (£10).—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for *Avisford Magdala*, born Jan. 17, bred by W. A. Thornton, Lock Partridge Green, Sussex; s. *Lock Sussex* 4334, d. *Mary of Lock* 12133 by *Ben of Lock* 2270.  
1325 II. (£5).—ALFRED PALMER, West Park, Lingfield, Surrey, for *Somerhill Gaygirl* 3rd, born Jan. 2, bred by Osmond E. D. Viglor Goldsmid, Somerhill, Tonbridge, Kent; s. *Donfire* 49th 15549, d. *Somerhill Gaygirl* 2nd 16941 by *Tutsham Nero* 2nd 3536.  
1324 III. (£3).—LORD LECONFIELD, Petworth House, Petworth, for *Petworth Patience* 11th, born Jan. 4; s. *Newick Nobleman* 2nd 4227, d. *Petworth Patience* 9th 16947 by *Lavington Gold Dust* 3414.

## **Welsh.<sup>2</sup>**

### **Class 177.—Welsh Bulls, calved on or before November 30, 1917.** [5 entries.]

- 1326 I. (£10).—R. M. GREAVES, Wern, Portmadoc, for *Snowdon Idwal* 1192, born August 9, 1918, bred by the University College of North Wales, Aber, Bangor; s. *Snowdon Arran* 908, d. *Hendie Gravel* 141 1263 by *Duke of Bodowry* 575.  
1330 II. (£5).—CAPT JOHN CHARLES WYNNE-FINCH, M.C. Voelus, Bettws-y-coed, for *Admiral* 1144, born Feb. 11, 1917, bred by the Hon. F. G. Wynn, Glynllivon, Carnarvon; s. *Glyn Togo* 934, d. *Glyn Blodwen* B 2301 by *Ap Mallard* 628.  
1328 III. (£3).—LORD PENRHYN, Penrhyn Castle, Bangor, for *Gunner of Penrhyn* 1141, born Feb. 20, 1917; s. *Nan Loren Model* 608, d. *Gellian* 2nd D 872 by *Berw* B 155.  
1327 R. N.—JOHN WILLIAM HOLLAND, Punt-y-Gwair, Abersoch, Carnarvonshire, for *Bodelwa Glynwyr*.  
R. C.—13.9.

### **Class 178.—Welsh Bulls, calved on or between December 1, 1917, and November 30, 1918.** [1 entry.]

- 1331 I. (£10).—HON. MRS. L. A. BRODRICK, Coed Cêch, Abergele, Denbighshire, for *Field Marshall Newydd*, born Aug. 13, 1918, bred by the Hon. F. G. Wynn, Glynllivon, Carnarvon; s. *Mababele of Pensiyn* 1133, d. *Lady Newydd* A. 2500 by *Ap Mallard* 628.

### **Class 179.—Welsh Bulls, calved on or between December 1, 1918, and November 30, 1919.** [6 entries.]

- 1334 I. (£10).—LORD HARLECH, Glyn, Talsarnau, for *Glyn Jeremiah*, born Dec. 10, 1918; s. *Rhydy Gwmedd Arun* 1174, d. *Glyn Myra* 2nd 2088 by *Meirion* 286.  
1333 II. (£5).—R. M. GREAVES, Wern, Portmadoc, for *Wern Ruler*, born Jan. 3, 1919; s. *Snowdon Idwal* 1192, d. *Wern Pansy* 2333 by *Wern Nonvuch* 715.

<sup>1</sup> Champion Silver Medal given by the Sussex Herd Book Society for the best Cow or Heifer in Classes 174-176.

<sup>2</sup> £30 towards these Prizes were given by the Welsh Black Cattle Society.

## Award of Live Stock Prizes at Darlington, 1920. lxxxv

(Unless otherwise stated, each prize animal named below was "bred by exhibitor.")

- 1335 III. (£3.)—H. J. LEWIS, Cerrig Barend, Brynmeyn, Anglesey, for *Bodelwa Botha*, born May 9, 1919, bred by O. R. Hughes, Bodelwa, Ty Croes, Anglesey; s. Cwylan Botha, 1910, d. Bodelwa Sally 2676 by Madryn King 493.  
 1336 R. N.—LORD PENRHYN, Penrhyn Castle, Bangor, for *Dumbell of Penrhyn*, H. C.—1337. C.—1332.

**Class 180.—Welsh Cows or Heifers (in-milk), calved on or before November 30, 1917. [3 entries.]**

- 1340 I. (£10.)—LORD PENRHYN, Penrhyn Castle, Bangor, for *Hester 3rd of Penrhyn* 2311, born June 11, 1914, calved Jan. 28, 1920; s. Madryn Cawr 488, d. Voelas Hester 1222 by Eifonydd 417.  
 1339 II. (£5.)—R. M. GREAVES, Wern, Portmadoc, for *Tynllwyn Dolly 2nd* 2487, born Oct. 30, 1913, calved March 8, 1920, bred by W. Williams, Tynllwyn, Bodorgan, Anglesey; s. Penrhyn Tudor 516, d. Tynllwyn Nellie 1528 by Madryn Major 500.  
 1338 III. (£3.)—HON. MRS. L. A. BRODRICK, Coed Coch, Abergale, Denbighshire, for *Barend 3rd* 1944, born Aug. 3, 1912, calved March 1, 1920, bred by John Williams, Tyddyn Adda, Brynaucyn, Anglesey; s. Wern to dine 357, d. Barend 2nd 1943.

**Class 181.—Welsh Heifers, calved on or between December 1, 1917, and November 30, 1918. [5 entries.]**

- 1343 I. (£10.)—LORD PENRHYN, Penrhyn Castle, Bangor, for *Rose 8th of Penrhyn*, born Dec. 21, 1917; s. Blodgorn 1145, d. Bangor Rose 3rd 1305 by Glyn Chief 400.  
 1344 II. (£5.)—CAPT. JOHN CHARLES WYNNE-FINCH, Voelas, Bettws-y-coed, for *Voelas Quartz*, born Dec. 19, 1917; s. Escuan Gwilym 981, d. Escuan Nellie 2574 by Eucuan Eryll 553.  
 1342 III. (£3.)—R. M. GREAVES, Wern, Portmadoc, for *Wern Rhianon*, born March 15, 1918; s. Bachelllyn Glyndwr 1080, d. Wern Ideal 1280 by Duke of Wellington 294. H. C.—1341. C.—1345.

**Class 182.—Welsh Heifers, calved on or between December 1, 1918, and November 30, 1919. [10 entries.]**

- 1354 I. (£10.)—CAPT. JOHN CHARLES WYNNE-FINCH, Voelas, Bettws-y-coed, for *Voelas Lyvia*, born March 5, 1919; s. Stamp of Penrhyn 1133 d. Escuan Princess 2576 by Escuan Eryll 553.  
 1349 II. (£5.)—JOHN WILLIAM HOLLAND, Punt-y-Gwair, Abersoch, Carnarvonshire, for *Punt-y-Gwair Primrose*, born May 22, 1919; s. Bachelllyn Goalkeeper 1112, d. Molly 4th of Penrhyn 2921 by Makeking 181.  
 1346 III. (£3.)—HON. MRS. L. A. BRODRICK, Coed Coch, Abergale, Denbighshire, for *Crugeron Mair 3rd*, born Dec. 9, 1918; s. Rupert, d. Crugeron Mair 2150.  
 1355 R. N.—ARTHUR W. WILLMER, Waen Isa, Dolgelly, for *Lady Gay*, H. C.—1351. C.—1353.

### Red Polls.<sup>1</sup>

**Class 183.—Red Poll Bulls, calved in or before 1917. [5 entries.]**

- 1357 I. (£10, & Champion.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for *Marham Dauntless* 11031, born Jan. 23, 1916; s. Gay Davyson 10585, d. Davy 308th H1 20697, by Majolini 3600.  
 1350 II. (£5, & R. N. for Champion.)—O. DUDLEY SMITH, Strensham Court, Worcester, for *Strensham Rupert* 11213, born May 7, 1917; s. Ashlyns Count 10125, d. Strensham Ruperta 2578 by Strensham Purple Emperor 10085.  
 1358 III. (£3.)—PRIG-GEN, NOEL A. LOWRY COARY, D.S.O., Rowton Castle, Shrewsbury, for *Sudbourne Alma* 11216, born April 22, 1917, bred by Kenneth M. Clark, Sudbourne Hall, Oxford; s. Hovingham Aldeburgh 3rd 10585, d. Sudbourne Fair Lass 24985 by Acton Crowfoot 997.

**Class 184.—Red Poll Bulls, calved in 1918. [6 entries.]**

- 1361 I. (£10.)—MAJOR D. G. ASHLEY, Little Plumstead Hall, Norwich, for *Colworth Orchid* 11294, red, born June 26, 1918, bred by A. E. Raven, Colworth, Sharnbrook; s. Colworth Starfish 10965, d. Olive of Normandy 22208 by Rockefeller 8853.  
 1362 II. (£5.)—MAJOR C. L. BLUNDELL, Halsall House, Ormskirk, for *Marham Peanut* 11413, born Feb. 24, 1918, bred by T. Brown & Son, Marham Hall, Downham; s. Kerrison Surprise 10890, d. Marham Pancake 25263 by Ashlyns Count 10125.  
 1354 III. (£3.)—J. G. DUGDALE, The Abbey, Cirencester, for *Keaton Gloucester* 11423, born Feb. 13, 1918, bred by R. Harvey Mason, Neekn Hall; s. Shrewsbury 10489, d. Gudiva 22573 by Turk 10115.  
 1366 R. N. W. L. HORBURY, Manor House Farm, Upton, Birkenhead, for *Upton Crotchet*, H. C.—1365.

<sup>1</sup> £30 towards these Prizes were given by the Red Poll Cattle Society.  
 \* Champion Prize of £5 given by the Red Poll Cattle Society for the best Bull in Classes 183-185.

# lxxxvi Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

## Class 185.—Red Poll Bulls, calved in 1919. [13 entries.]

- 1377 I. (£10.)—G. DUDLEY SMITH, Strensham Court, Worcester, for **Strensham Wizard**, born Jan. 19; s. Alarum 10820, d. Strensham Rosemary 25448 by A. Hynes Count 10125.  
 1375 II. (£5.)—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Notts., for **Hatton Fabian**, born Feb. 2, bred by J. P. Arkwright, Hatton, Warwick; Hatton Guardian 11135, d. Hatton Fable 24035 by Acton Hussar 9881.  
 1369 III. (£3.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Marham Florin**, red, born Jan. 17; s. Marham Dauntless 11631, d. Flurter P. 3 18946 by W. W. W. 5257.  
 1376 IV. (£2.)—CAPT. J. O. SHERRARD, Gaddesby Hall, Leicestershire, for **Sudbourne Loyalist**, born Jan. 1, bred by J. Watson, Sudbourne Hall, Orford; s. Acton Loyal 10642, d. Rendlesham Royal Gift 23893 by Davyson 265th 9220.  
 1367 R. N.—II. M. THE KING, Sandringham, for **Royal Searchlight**, H. C.—1368. C.—1370, 1378.

## Class 186.—Red Poll Cows or Heifers (in-milk), calved in or before 1917. [17 entries.]

- 1386 I. (£10, & Champion.)—J. B. DIMMOCK, Shotford Hall, Harleston, Norfolk, for **Shotford Lady Mary** 25872, born Sept. 9, 1915, calved April 28, 1920; s. Shotford Alert 10488, d. Rendlesham Lady Mary 24786 by Longford Demoniac 10205.  
 1383 II. (£5.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Handsome Plantain P1** 24577, born April 7, 1914, calved Jan. 27, 1920; s. Asnlyn's Count 10125, d. Plantain P1 2517 by Acton 9878.  
 1381 III. (£3.)—MAJOR D. G. ASTLEY, Little Plumstead Hall, Norwich, for **Plumstead Priceless** 25334, born Feb. 11, 1918, calved March 13, 1920; s. Plumstead Pearl 10778, d. Plumstead Periwinkle 24472 by Acton D. Drynan 9880.  
 1388 IV. (£2.)—THE MARCHIONESS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for **Charming Lass** 24484, born July 13, 1914, calved Feb. 24, 1920; s. Red David 10693, d. Charming Davy 12th 22036 by Starston Emperor 9353.  
 1387 R. N.—J. G. DUDDALE, The Abbey, Cirencester, for **Manor Hyacinth**, H. C.—1389. C.—1391.

## Class 187.—Red Poll Heifers, calved in 1918. [10 entries.]

- 1400 I. (£10 and R. N. for Champion.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Marham Dainty** 27127, born March 2; s. Marham Gay Lad 10486, d. Marham Daisy H 1 25257 by Asnlyn's Count 10125.  
 1398 II. (£5.)—LT. COL. R. C. BATT, C.B.E., M.V.O., Gresham Hall, Norwich, for **Gresham Aster** 23856, born Feb. 23; s. Honingham Astrologie 2nd 10594, d. Letton Mavis 23363 by Letton Omega 2nd Davyson 10048.  
 1406 III. (£3.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Mary** 27312, born June 6, bred by Kenneth M. Clark, Sudbourne Hall, Orford; s. Sudbourne Credit 10790, d. Sudbourne Model 23800 by Acton Crowfoot 9987.  
 1406 R. N.—JOSEPH WATSON, for **Sizewell Wonder**, H. C.—1402. C.—1403.

## Class 188.—Red Poll Heifers, calved in 1919. [18 entries.]

- 1410 I. (£10.)—MAJOR D. G. ASTLEY, Little Plumstead Hall, Norwich, for **Plumstead Poupée**, born Feb. 28; s. The Hussar 11233, d. Plumstead Powder Puff 25301 by Battle 10142.  
 1423 II. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Barvin Sal**, born Feb. 21, bred by W. E. Hulston, Barvin Potters Bar; s. Barvin Warspite, d. Barvin Salvia 2383 by Asnlyn's Wentworth 10233.  
 1409 III. (£3.)—MAJOR D. G. ASTLEY, for **Plumstead Prosperous**, born Jan. 15; s. Plumstead Patrol 11047, d. Acton Cuddeberry 21930 by Acton Merlin 9657.  
 1406 IV. (£2.)—MAJOR D. G. ASTLEY, for **Plumstead Perfection**, born Jan. 10; s. Plumstead Patrol 11047, d. Plumstead Priceless 25334 by Plumstead Pearl 10778.  
 1413 R. N.—LT. COL. SIR MERRIE R. BURRELL, BT., Knapp Castle, West Grinstead, for **Knapp Meadow Dell Ist**, H. C.—1422. C.—1412, 1414.

## Park Cattle.\*

### Class 189.—Bulls, calved in or before 1919. [5 entries.]

- 1453 I. (£10.)—CAPTAIN J. H. HOWELL, Trewellwell, Solva, Pem., for **Solva Snowball**, white, born Jan. 15, 1915, bred by G. H. Dawkins, Milcote, Charlbury.  
 1429 II. (£5.)—MRS. G. LANCASTER, Kelmorsh Hall, Northampton, for **Kelmorsh King**, white and black, born in July, 1918; s. Kelmorsh James 51.  
 1426 III. (£3.)—SIR CLAUD ALEXANDER, BT., Faygate Wood, Faygate, Sussex, for **Faygate Beaconsfield**, white, born April 26, 1913; s. Faygate Brace 13, d. Frimrose.

\* Champion Prize of £3 given by the Red Poll Cattle Society for the best Cow or Heifer in Classes 136-138.

\* £20 towards these Prizes were given by the Park Cattle Society.

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(Unless otherwise stated, each prize animal named below was "bred by exhibitor.")

### Class 190.—Cows or Heifers (in milk), calved in or before 1917.

[6 entries.]

- 1430 I. (£10.)—SIR CLAUD ALEXANDER, BT., Faygate Wood, Faygate, Sus.-ex. for **Faygate Alba** 228, white, born in April, 1913, calved May 5, 1920, bred by Major Q. E. Gurney, Bawdeswell Hall, Norfolk; s. Somerford Duke, d. Northrepps Alberta 268.  
 1434 II. (£5.)—CAPTAIN J. H. HOWELL, Trewellwell, Solva, Pem., for **Solva Snowdrop**, white, born in March, 1915, calved May 21, 1920, bred by Charles Mathias, Lamphey, Pembrokeshire.  
 1432 III. (£3.)—SIR CLAUD ALEXANDER, BT., for **Faygate Swop** 2nd 74, white, born in 1914, calved June 17, 1920; s. Faygate Bruce 13, d. Swop by Northrepps Samson. C.—1435.

### Class 191.—Heifers, calved in 1918. [2 entries.]

- 1438 I. (£10.)—MAJOR Q. E. GURNEY, Bawdeswell Hall, Norfolk, for **Bawdeswell Albana** 170, white, born March 17; s. Tom, d. Faygate Alba 226 by Somerford Duke.  
 1437 II. (£5.)—MRS. G. LANCASTER, Kelmarsh Hall, Northampton, for **Kelmarsh Pansy** 2nd, white and black, born in Oct.

## Aberdeen Angus.<sup>1</sup>

### Class 192.—Aberdeen Angus Bulls, calved on or before November 30, 1917.

[4 entries.]

- 1440 I. (£10. & Champion.<sup>2</sup>)—C. T. SCOTT, Buckland Manor, Broadway, Worcs., for **Errura of Blean** 4148, born Dec. 8, 1916, bred by James M. L. Marshall, Blean, Blairgowrie; s. Baron Beauford 35480, d. Etruria of Blean 52880 by Emilio of Dooholm 31756.  
 1441 II. (£5.)—ARNOLD T. WATTS, Broadmeadow House, Hutton, Berwickshire, for **Newcombe Laddie** 4264, born Jan. 3, 1911, bred by Lord Penrhyn, Wicken Park, Stony Stratford; s. Bountiful 37594, d. Beryl of Wicken 53465 by Edmont 29154.  
 1439 III. (£3.)—GEORGE LAX, Laylands, Scorton, Darlington, for **Elastone** 11811, black, born Dec. 1, 1916, bred by Viscount Allendale, Bywell Hall, Stockfield-on-Tyne; s. Erdrick Prince 57864, d. Elasticity of Bywell 51787 by Vellum of Bywell 32650.  
 1438 E. N.—GEORGE HOYLES, Skidby Manor, Hull, for **Edgar of Goodwood** 41222, born Feb. 21, 1917, bred by the Duke of Richmond and Gordon, Goodwood, Chichester; s. Mazer 36456, d. Edina of Aldbar 16561 by Beaver 2nd of Ardross 26565.

### Class 193.—Aberdeen Angus Bulls, calved on or between December 1, 1917, and November 30, 1918. [9 entries.]

- 1445 I. (£10.)—J. H. BRIDGES, Langshott, Horley, Surrey, for **Earl of Surrey** 43238, born Dec. 1, 1917; s. Gath 38698, d. Elaine of Langshott 60254 by Eland of Ballindalloch 24329.  
 1446 II. (£5.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for **Eric 2nd of Maisemore** 43255, born Dec. 11, 1917; s. Ellegant of Tubberdaly 37578, d. Erica of Maisemore 32160 by Brave Briton of Maisemore 30218.  
 1439 III. (£3.)—COLONEL C. W. SOFER-WHITEHEAD, Addington Park, West Malling, Kent, for **Eaton of Harviestoun** 43247, born Jan. 26, 1918, bred by J. E. Kerr, Harviestoun Castle, Dollar; s. Eden Eric of Dalmeny 29284, d. Edna of Harviestoun 40170 by Prince of the Wassail 23751.  
 1438 E. N.—JOHN CATON, Woodbustwick Hall, Norwich, for **Blackberry** 346, white, born Oct. 3, 1912, calved Nov. 15, 1919; s. Lancaster, d. Bluebell 2nd by Prince of Wales. H.C.—1448. C.—1442.

### Class 194.—Aberdeen Angus Bulls, calved on or between December 1, 1918, and November 30, 1919. [14 entries.]

- 1454 I. (£10.)—H. L. C. BRASSEY, M.P., Apethorpe Hall, Peterborough, for **Black Knight of Auchterarder** 45102, born April 26, 1914, bred by A. T. Reid, Auchterarder; s. Evmar 41553, d. Blackbird 5th of Braeval 55862 by Prince of Peru 32409.  
 1457 II. (£5.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for **Elfarcombe of Goodwood** 43573, born Feb. 14, 1918, bred by the Duke of Richmond and Gordon, H.G. Goodwood, Chichester; s. Mazer 36456, d. Ellis of Goodwood 53075 by Benedict of Wicken 34077.  
 1453 III. (£3.)—LIEUT.-COL. MATTHEW G. E. BELL, Bourne Park, Canterbury, for **Editor of Bourne** 45605, born Jan. 7, 1919; s. Darwin 5th of Claverdon 39100, d. Effulgent 4th of Bourne 47723 by Jock of Morlich 34704.

<sup>1</sup> £20 towards these Prizes were given by the Aberdeen Angus Cattle Society.

<sup>2</sup> Champion Gold Medal given by the Aberdeen Angus Cattle Society for the best animal in Classes 192-197.



# lxxxviii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1461 IV. (£2.)—C. T. SCOTT, Buckland Manor, Broadway, Worcs., for Jolly George of Buckland 46172, born Jan. 3, 1919; s. Proud George, 36595, d. Joviality 2nd of Benton 53273 by Bright Actor 31512.

1462 R. N.—C. T. SCOTT, for Popinjay of Buckland.  
H.C.—1463. C.—1458.

**Class 195.—Aberdeen Angus Cows or Heifers (ia-milk), calved on or before November 30, 1917. [11 entries.]**

1470 I. (£10, Champion, & R. N. for Champion.) JAMES KENNEDY, Doonholm, Ayr, for Mendoza 3894, born Feb. 6, 1916, calved Jan. 13, 1920; s. Planet of Duthie 33008, d. Myrica 32175 by Rover of Craibstone 12948.

1475 II. (£5.)—EDWARD A. WILKIN, Conholt Park, Andover, Hants, for Tuberosa of Conholt 55475, born Dec. 16, 1913, calved Feb. 21, 1920; s. Baron Breslau 30146, d. Tuberosa of Standen 43477 by Elector of Benton 21514.

1465 III. (£3.)—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts, for Ekenison of Advie 55115, born Dec. 30, 1915, calved Feb. 3, 1920, bred by Peter Grant, Advie Mans, Advie; s. Prince Benison of Balfindralloch 36711, d. Etheldreda 40621 by Kilsold 21827.

1467 R. N.—SIR JOHN R. FINDLAY, K.B.E., Aberlour, Banffshire, for Pride of Spy 14th.  
H.C.—1465. C. 1466, 1472.

**Class 196.—Aberdeen Angus Heifers, calved on or between December 1, 1917, and November 30, 1918. [5 entries.]**

1470 I. (£10, & R. N. for Champion.) JAMES KENNEDY, Doonholm, Ayr, for Matasla 6217, black, born Jan. 15, 1918; s. Planet of Duthie 33008, d. Molina 56643 by Matador of Bywell 34818.

1476 II. (£5.)—VISCOUNT ALLENDALE, Bywell Hall, Stocksfield-on-Tyne, for Grace of Bywell 61608, born Dec. 21, 1917; s. Peasant of Glenfarchas 40166, d. Grace of Auchterarder 33007 by Romeo of Balfindralloch 29641.

1477 III. (£3.)—J. H. BRIDGES, Langshot, Horley, Surrey, for Jill of Preston 17th 61770, born Dec. 14, 1917, bred by Rev. C. Borden, Preston Bissett, Buckingham; s. Jacomo 39815, d. Jill of Preston 4th 60215 by Eloro 30415.

1478 R. N.—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts, for Eva of Stagenhoe.

**Class 197.—Aberdeen Angus Heifers, calved on or between December 1, 1918, and November 30, 1919. [20 entries.]**

1485 I. (£10.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for Eve 3rd of Maisemore, born May 28, 1919; s. Idyll of Maisemore 36219, d. Eve of Maisemore 52161 by Brave Briton of Maisemore 50218.

1489 II. (£5.)—JAMES KENNEDY, Doonholm, Ayr, for Black Begonia 65038, born Dec. 17, 1918; s. Elect of Doonholm 41277, d. Biology 52694 by Mondello 27193.

1481 III. (£3.)—VISCOUNT ALLENDALE, Bywell Hall, Stocksfield-on-Tyne, for Gracious of Bywell 63583, born Dec. 10, 1918; s. Peasant of Glenfarchas 40166, d. Grace of Auchterarder 53067 by Romeo of Balfindralloch 29341.

1490 IV. (£2.)—JAMES KENNEDY, for Black Mab 63038, born Dec. 17, 1918; s. Elect of Doonholm 41277, d. Bovine Maid 59186 by Mondello 27193.

1491 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading, for Ellen of Basildon.  
H.C.—1493, 1490. C.—1495.

## Galloways.<sup>3</sup>

**Class 198.—Galloway Bulls, calved on or before November 30, 1918.**

[7 entries.]

1501 I. (£10, & Champion.)—SIR ROBERT W. BUCHANAN-JARDINE, BT., Castlemilk, Lockerbie, for Jovial of Blackcombe 11710, born April 24, 1912, bred by Hugh Fraser, Arkland, Dalbeattie; s. Optimist 11033, d. Lady Nancy 3rd 17482 by Campfollower of Stepford 7470.

1502 II. (£5, & R. N. for Champion.)—JOHN CUNNINGHAM, Tarbroch, Dalbeattie, for Sapphire 12453, born May 4, 1914, bred by Thomas Biggar and Sons, Chapilton, Dalbeattie; s. Pure Gem 11856, d. Lizzie 2nd of Chapilton 14604 by Lord William of Durhamhill 7108.

<sup>1</sup> Champion Gold Medal given by the Aberdeen Angus Cattle Society for the best animal in Classes 192-197.

<sup>2</sup> Champion Gold Medal given by the English Aberdeen Angus Cattle Association for the best animal of the opposite sex to that of the animal awarded the Champion Gold Medal of the Aberdeen Angus Cattle Society in Classes 192-197.

<sup>3</sup> £20 towards these Prizes were given by the Galloway Cattle Society.

<sup>4</sup> Champion Prize of £5 given by the Galloway Cattle Society for the best animal in Classes 198-202.

## Award of Live Stock Prizes at Darlington, 1920. lxxxix

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1503 III. (£3.)—W. B. DONALDSON, Auchincled, Blanefield, Stirlingshire, for **Tarbrooch Caesar** 1906, born Jan. 20, 1918, bred by John Cunningham, Tarbrooch, Dalbeattie; s. Caesar 10697, d. Tarbrooch Doris 3rd 19511 by Bondsman 7308.
- 1504 E. N.—ROBERT GRAHAM, Auchengassel, Twynholm, for **Tarbrooch Worthy**. H.C.—1505.

**Class 199.—Galloway Bulls, calved on or between December 1, 1918, and November 30, 1919. [6 entries.]**

- 1512 I. (£10.)—D. & J. LITTLE, Corrie Halls, Lockerbie, for **Kennedy of Killearn**, born Dec. 23, 1918, bred by W. B. Donaldson, Auchincled, Blanefield, Stirlingshire; s. Cuthbert 11450, d. Favourite 22nd of Lochkil 18302 by Orhelo of Kilquhanity 8469.
- 1508 II. (£5.)—ROSALIND COUNTESS OF CARLISLE, Askerton Castle, Brumpton, Cumb. for **Skirmisher** 1915, born Jan. 7, 1919, bred by Robert Shepley-Shepley, Troquharn, Balvachellan; s. Nero of Dalwyne 1302, d. Lavender 8th of Hensol 22647 by Fleur de Lys 11027.
- 1513 III. (£3.)—ROBERT WILSON, 30 Cambridge Street, Newcastle-on-Tyne, for **Sir Digby 2nd of Craigneston** 14155, born Feb. 14, 1919, bred by Francis N. M. Gourlay, Milton, Tynron; s. Raleigh of Killearn 11888, d. Fiona of Craigneston 24641 by Cuthbert 2nd 11694.
- 1509 E. N.—ROBERT GRAHAM, Auchengassel, Twynholm, for **Cameron 3rd of Tundergarth Mains**.

**Class 200.—Galloway Cows or Heifers (in-milk), calved on or before November 30, 1917. [7 entries.]**

- 1516 I. (£10.)—SIR ROBERT W. BUCHANAN-JARDINE, BT, Castle Milk, Lockerbie, for **Dorothy of Castlemilk** 24674, born Dec. 3, 1914, calved March 10, 1920; s. Archer 5th of Castlemilk 11010, d. Dorothy 5th of Stepford 22156 by Cairn of Stepford 888.
- 1517 II. (£5.)—JOHN CUNNINGHAM, Tarbrooch, Dalbeattie, for **Maggie Lauder 12th of Tarbrooch** 23325, born May 5, 1913, calved May 18, 1920; s. Challenger 10837, d. Maggie Lauder of Tarbrooch 17466 by MacDougall 4th of Tarbrooch 6811.
- 1519 III. (£3.)—ROBERT GRAHAM, Auchengassel, Twynholm, for **Nora of Auchengassel** 22568, born April 1, 1911, calved April 9, 1920, bred by B. H. Lane, Rush Hall, Limavady; s. Chix 10020, d. Our Sally 13674 by Brucina of Drumlanrig 8045.
- 1520 E. N.—ROBERT GRAHAM, Capel of Logan, Half Morton, Canonbie, for **Logan Lady 3rd**. H.C.—1514, 1518.

**Class 201.—Galloway Heifers, calved on or between December 1, 1917, and November 30, 1918. [7 entries.]**

- 1523 I. (£10.)—JOHN CUNNINGHAM, Tarbrooch, Dalbeattie, for **Netty 42nd of Tarbrooch** 26354, born Jan. 20, 1918; s. Sapphire 12368, d. Netty 38th of Tarbrooch 22586 by Sweepstakes 10001.
- 1539 II. (£5.)—ROBERT GRAHAM, Chapel of Logan, Half Morton, Canonbie, for **Logan Lady 5th**, 26163, born April 1, 1918; s. Owen of Barac 12498, d. Logan Lady 2nd 22348 by Ivanhoe 10767.
- 1524 III. (£3.)—JOHN CUNNINGHAM, for **Tarbrooch Doris 13th** 26357, born March 3, 1918; s. Sapphire 12368, d. Tarbrooch Doris 3rd 19511 by Bondsman 7308.
- 1530 E. N.—ROBERT GRAHAM, for **Logan Lady 6th**. H.C.—1522, 1527.

**Class 202.—Galloway Heifers, calved on or between December 1, 1918, and November 30, 1919. [6 entries.]**

- 1531 I. (£10.)—W. B. DONALDSON, Auchincled, Blanefield, Stirlingshire, for **Olivia of Killearn** 26897, born Dec. 14, 1918; s. Cuthbert 11450, d. Rowena 21735 by Cornerstone of Stepford 10013.
- 1528 II. (£5.)—SIR ROBERT W. BUCHANAN-JARDINE, BART, Castle Milk, Lockerbie, for **Chloris of Castlemilk** 27020, born Jan. 31, 1919; s. Jovial of Blackcombe 11718, d. Claire 2nd of Castlemilk 23487 by Baron 10033.
- 1529 III. (£3.)—JOHN CUNNINGHAM, Tarbrooch, Dalbeattie, for **Tarbrooch Zena 3rd** 26879, born Jan. 20, 1919; s. Sapphire 12368, d. Tarbrooch Zena 22070 by Sweepstakes 10001.
- 1530 E. N.—W. B. DONALDSON, for **Clare 4th of Killearn**. H.C.—1532, 1533.

## Highland.

**Class 203.—Highland Bulls, calved in or before 1919. [No entry.]**

**204.—Highland Cows or Heifers (in milk). [No entry.]**

## xc Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Ayrshires.<sup>1</sup>

Class 205.—*Ayrshire Bulls, calved in or before 1919.* [4 entries.]

- 1534 I. (£10.)—MRS. HOULSON CRAUFORD, Dunlop House, Dunlop, Ayrshire, for *Howie's Hot Stuff* 1785, white and brown, born March 2, 1918, bred by Thomas Logan, Low Milton, Mylehole, Ayrshire; s. *Howie's Blockade* 15275, d. *Carston Mary Anne* 4135, by *High Tarbeg Coronation* 9377.  
 1536 II. (£5.)—ROBERT MARSHALL, Mains of Kilmarnock, by Alexandria, Dumbarshire, for *Gawhillan Flashlight* 18197, white and brown, born Jan. 27, 1918, bred by William Watson, High Tarbeg, Ochiltree; s. *Barbrough Daylight* 16350, d. *High Tarbeg Cherry* 41173 by *High Tarbeg Coronation* 9377.  
 1535 III. (£3.)—WILLIAM GIBSON, Moorside Farm, Worston, Clitheroe, Lancs., for *Birnieknowe Snowball* 17510, white and brown, born Feb. 11, 1918, bred by Thomas Baird, Birnieknowe, Auchinleck, Ayrshire; s. *Garselough Dreadnought* 15000, d. *Birnieknowe Gay Lass* 3rd 38052 by *Birnieknowe President* 8808.

Class 206a.—*Ayrshire Cows or Heifers (in-milk).* [12 entries A and B.]

- 1538 I. (£10.)—MRS. HOULSON CRAUFORD, Dunlop House, Dunlop, Ayrshire, for *Bruchag Pearl* 2nd, A 2070, white, born April 23, 1912, calved June 4, 1920, bred by Mrs. Mackay, Bruchag, Rothesay; s. *Bruchag Marquis* 10176, d. *Bruchag Pearl B* 2628 by *Bruchag Ardve* 7455.  
 1542 II. (£5.)—WILLIAM GIBSON, Moorside Farm, Worston, Clitheroe, Lancs., for *Moorside Atlanta* 3rd 51896, black and white, born Aug. 3, 1914, calved May 21, 1920; s. *Moorside Albanian* 9780, d. *Moorside Atlanta* 32530 by *Clockton Tam* 616.  
 1541 III. (£3.)—WILLIAM GIBSON, for *Moorside Aecia* 32527, brown, born April 23, 1912, calved May 13, 1920; s. *Willoxton St. John* 8053, d. *Willoxton Jean* 2nd 27741 by *Willoxton Morrison* 7154.

Class 206b.—*Ayrshire Cows or Heifers (in-calf).*

- 1547 I. (£10.)—JACOB S. MURRAY, Dalrig Farm, New Cumnock, Ayrshire, for *Carston Rhoda* 3271, brown and white, born April 7, 1914, in calf; s. *St. Thomas* 7004, d. *Gunderella* 3rd 36325 by *Carston Merer King* 5307.  
 1545 II. (£5.)—ADAM W. MONTGOMERIE, Lessnessock, Ochiltree, Ayrshire, for *Redhills Beatrice*, brown and white, born Jan. 14, 1911, in calf, bred by Hon. Young Redhills, Dumfries; s. *Royal Chief* 8602, d. *Redhills Kate* 21539 by *Redhills Substance* 5235.  
 1549 III. (£3.)—MUNGO SLOAN, Douglas Hall, Ecclefechan, Dumfriesshire, for *Douglas Hall Dandy* 2nd, brown and white, born Feb. 28, 1916, in calf; s. *Druzenen Albert* 10945, d. *Douglas Hall Daisy* 2nd 36429 by *Chalermains Wheel of Fortune* 6343.  
 1540 R. N.—MRS. HOULSON CRAUFORD, Dunlop House, Dunlop, Ayrshire, for *Hobsland Mary* 7th.

### British Friesians.<sup>2</sup>

The letters F.R.S. after the number of an animal indicate that such animal is registered in the *Friesch Rundvee Stamboek* (*Friesland Cattle Herd Book*) *Zwartebonte* (Black and White) Section.

The letters H., F.R.S., refer to the *Helpstaamboek* (*Auxiliary Herd Book*) *Zwartebonte* (Black and White) Section of the *Friesch Rundvee Stamboek*.

Unless otherwise stated, the numbers refer to the *British Friesian Herd Book*.

Class 207.—*British Friesian Bulls, calved in or before 1917.* [12 entries.]

- 1554 I. (£10.)—EATON & MUGGERIDGE, Thurston Hall, Framfield, Sussex, for *Kirkhill* (imported) *Karel* 2nd 4051, born Dec. 6, 1913, bred by R. Brandsma, Lekkum, Holland; s. *Karel* 5264 F.R.S., d. *Jansma* 5th 15138 F.R.S., by *Jelmer* 3235 F.R.S.  
 1551 II. (£5.)—A. & J. BROWN, Haydon Hill Farm, Aylesbury, for *Petygards* (imported) *Bles Albert* 3221, born Nov. 18, 1913, bred by Jan Boersma, Friens, Holland; s. *Albert* 1306 H. F.R.S., d. *Anna* 3rd 10935 F.R.S., by *Jan* 2501 F.R.S.  
 1558 III. (£3.)—R. W. J. SUTHERLAND, Gadairwen, Croeslaen, Glam., for *Colton Vic Bram* 3rd 7547, born March 16, 1917, bred by Hugh Brown, Colton Mains, Dunfermline; s. *Colton* (imported) *Vic Bram* 7505, d. *Colton Bramble* 2nd 14260 by *Fairlight Wilhelm* 139.  
 1555 IV. (£3.)—FREDERICK NEAME, The Offices, Macknade, Faversham, Kent, for *Golf Boter* 4th 5131, born Nov. 20, 1915, bred by John Bromet, Golt Links Farm, Tadcaster; s. *Golf* (imported) *Betermijn* 3019, d. *Garton Fullpail* 8154 by *Garton Baxendale* 163.  
 1550 R. N.—J. H. BEAN, C.B.E., Chaddeley Corbett, Kidderminster, for *Glenanne Pioneer*.

<sup>1</sup> £20 towards these Prizes were given by the Ayrshire Cattle Herd Book Society.

<sup>2</sup> £35 towards these Prizes were given by the British Friesian Cattle Society.

## Award of Live Stock Prizes at Darlington, 1920. xci

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 208.—*British Friesian Bulls, calved in 1918.* [8 entries.]

- 1563 I. (£10, & Champion.<sup>1</sup>)—JAMES E. HUGHES, Lea Hall, Mollington, Chester, for **Bulkeley Klaske's Ceres** 2227, born July 21, bred by I. B. & H. L. Jarmay, Bulkeley Hall, Malpas; s. Bulkeley (imported) Mietje's Ceres 3823, d. Bulkeley (imported) Klaske 5th 1718 by De Hoop 5406 F.R.S.
- 1563A II. (£5, & R. N. for Champion.<sup>1</sup>)—WILLIAM CHARLES JONES, Lyne Green, Macclesfield, for **Tarvin Poi Klaas** 2nd 10701, born Feb. 26, bred by G. B. Radcliffe, Pool Bank, Tarvin; s. Tarvin (imported) Poi Klaas 4521, d. Tarvin (imported) Zwaarte Hatsumer 19408 by Max 5753 F.R.S.
- 1562 III. (£3.)—W. A. BROCKLEHURST, Henbury Park, Macclesfield, for **Hedges Bonnie Fokke** 9563, born Feb. 23, bred by A. & J. Brown, Hedges Farm, St. Albans; s. Hedges (imported) Fokke 2nd 3923, d. Hedges Bonnie Annie 1698 by Hedged Hawkrigg Duke 23.
- 1566 R. N.—R. W. J. SUTHERLAND, Gdnairwen, Croesfaen, Glam., for **Lochlands Reputation**, C.—1568.

### Class 209.—*British Friesian Bulls, calved in 1919.* [12 entries.]

- 1571 I. (£10.)—PENNRYN STANLEY CONYERS, Hill Top Hall, Pannal, Harrogate, for **Colton Bert Bram** 11349, born Jan. 27, bred by Hugh Brown, Colton Mains, Dunfermline; s. Terling (imported) Vic Bertus 4511, d. Colton Bram 29326 by Colton (imported) Vic Bram 3705.
- 1573 II. (£5.)—E. SEEMER, Toat, Pulborough, for **Salctote Johan** 12649, born Jan. 7, bred by Francis B. May, Salctote Hall, Heybridge, Maldon; s. Wigginton Johan 7165, d. Hedges Moss Rose 1844 by Hedges Tatton King 321.
- 1577 III. (£3.)—SIR JOHN RAMSDEN, BT. (HACHE HERD), Bulstrode Park, Gerrards Cross, Bucks, for **Clockhouse King Akrin** 1821, born Jan. 22, bred by Trevor Williams, Fynesfield Manor, West Hyde, Rickmansworth; s. Clockhouse Rindol, 7513, d. Garton (imported) Akke 6th 17784 by Albert 2nd 6411 F.R.S.
- 1579 IV. (£2.)—CHRISTOPHER WORDSWORTH, Brooklands, South Godstone, Surrey, for **Brooklands Ynte** 11143, born March 1; s. Brooklands Joh-o-Work 4917, d. Brooklands Fryleigh 27724 by Kingswood (imported) Ynte 4947.
- 1575 R. N.—EDWARD LUTLER, Lea Manor Farm, Mollington, Chester, for **Tarvin Invincible**.

### Class 210.—*British Friesian Cows (in-milk), calved in or before 1916.* [15 entries.]

- 1583 I. (£10, & Champion.<sup>2</sup>)—A. & J. BROWN, Haydon Hill Farm, Aylesbury, for **Hedges Dutch Stately** 24066, born Nov. 25, 1916, calved Jan. 16, 1920; s. Hedges (imported) Fokke 2nd 5923, d. Hedges Stately 1916.
- 1589 II. (£5 & R. N. for Champion.<sup>2</sup>)—THE HACHE HERD, Mantham Court, Worthing, Sussex, for **Brooklands (imported) Sietske** 4th 17652, born April 7, 1913, calved Dec. 22, 1919, bred by J. J. Oostra, Mungam, Holland; s. Bertus 5955 F.R.S., d. Sietske 22589 H. F.R.S.
- 1587 III. (£3.)—EATON & MUGGERIDGE, Thurston Hall, Framfield, Sussex, for **Kirkhill Lucy** 2nd 25244, born Feb. 25, 1916, calved May 31, 1920, bred by Dr. William Sinclair, Kirkhill, Nigg, by Aberdeen; s. Kirkhill (imported) Karel 2nd 4651, d. Kirkhill Lucy 9379 by Colton Queen's Own 87.
- 1591 IV. (£2.)—OLYMPIA AGRICULTURAL COMPANY LIMITED, Sudbourne Hall, Orford, Suffolk, for **Colton Royal Rita** 6889, born April 7, 1912, calved May 10, 1920, bred by Hugh Brown, Colton Mains, Dunfermline; s. Fairlight/Wilhelmina 139, d. Colton Rita 624.
- 1584 R. N.—A. & J. BROWN, Hedges Farm, St. Albans, Herts., for **Hedges Friesland Queen**, C.—1585, 1588.

### Class 211.—*British Friesian Heifers (in-milk), calved in 1917 or 1918.* [14 entries.]

- 1607 I. (£10.)—W. & R. WALLACE, Knebworth, Herts., for **Knebworth Countess** 29534, born June 23, 1917, calved Jan. 16, 1920; s. Wigginton (imported) Johan 4637, d. Southill Countess 3542 by Southill Excelsior 807.
- 1599 II. (£5.)—LIEUT.-COL. W. E. HARRISON, Wychnor Park, Burton-on-Trent, for **Colton Bram-Boylette** 2nd 28040, born March 27, 1917, calved Jan. 3, 1920, bred by Hugh Brown, Colton Mains, Dunfermline; s. Colton (imported) Vic Bram 3705, d. Colton Boylette 6892 by Colton Puritan 65.
- 1605 III. (£3.)—E. SEEMER, Toat, Pulborough, Sussex, for **Wigginton America** 31490, born Dec. 30, 1917, calved May 2, 1920; s. Wigginton (imported) Johan 4637, d. Knebworth Amelia 3rd 21052 by Lothian General 2943.

<sup>1</sup> Champion Silver Medal given by the British Friesian Cattle Society for the best Bull in Classes 207-209.

<sup>2</sup> Champion Silver Medal given by the British Friesian Cattle Society for the best Cow or Heifer in Classes 210-212.

## xcii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1904 IV. (£2.)—JAMES RUSSELL, Mapleton, Four Elms, Edenbridge, Kent, for **Tredegar Thistle** 2nd 21322, born May 5, 1917, calved March 29, 1920, bred by John T. Chambers, Widdington, North Weald, Essex; s. **Tredegar** (imported) Prince of Holland 4579, d. **Tredegar Thistle** 19430 by **Tredegar Courage** 779.

1597 R. N.—A. & J. BROWN, Hedges Farm, St. Albans, for Cymrie St. Malo.

**Class 212.**—*British-Friesian Heifers, calved in 1919.* [36 entries.]

1821 I. (£10.)—THE HACHE HERD, Muntham Court, Worthing, Sussex, for **Clockhouse Vic Rinze** 37668, born March 26, bred by Trevor Williams, Pyne-field, Manor, Rickmansworth; s. **Clockhouse** (imported) Vic Wouter 3691, d. **Clockhouse** (imported) Rinze 7th 17234 by **Buringa** 50th 5511 F.R.S.

1640 II. (£5.)—G. HOLT THOMAS, Northdean House, Hughenden, Bucks, for **Kingswood Ceres Myrtle** 39934, born Jan. 28, bred by Horace Hale, Findon, Worthing, Sussex; s. **Hedges Second Ceres** 6427, d. **Kingswood Myrtle** 9294 by **Kingswood Prince** 341.

1827 III. (£3.)—OLYMPIA AGRICULTURAL COMPANY, LIMITED, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Dairymaid** 42132, born Jan. 12; s. **Golf** (imported) **Botermijn** 3919, d. **Hedges Dairymaid** 1742.

1645 IV. (£2.)—CHRISTOPHER WORDSWORTH, Brooklands, South Godstone, Surrey, for **Brooklands Princess Afke** 37502, born March 27; s. **Tredegar** (imported) Prince of Holland 4579, d. **Brooklands Snake** 20332 by **Verwachting** 7059 F.R.S.

1614 V. (£2.)—A. & J. BROWN, Hedges Farm, St. Albans, for **Hedges Albert Nancy**, born Feb. 4; s. **Petygars** (imported) **Bies Albert** 4321, d. **Hedges Nancy** 5th 21399 by **Hedges Bushman** 265.

1618 R. N.—HERBERT W. DAKING, White Hall, Thorpe-le-Soken, Essex, for **Pomona Cynthia**.

G.—1844.

### Jerseys.<sup>1</sup>

N.B.—In the Jersey Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the *Inland Herd Book*. A number without brackets indicates that the animal is registered in the *English Jersey Herd Book*.

**Class 213.**—*Jersey Bulls, calved in or before 1917.* [6 entries.]

1649 I. (£10, & Champion.<sup>2</sup>)—MAJOR THE HON. HAROLD PEARSON, Cowdray Park, Midhurst, Sussex, for **Pioneers Noble** 12416, dark fawn, born March 21, 1916, bred by E. E. Leonard, St. Owen's, Jersey; s. **Golden Fern's Noble** 10626, d. **Bontilliere** F.S.H.C. 9670.

1651 II. (£5.)—BRIG.-GEN. J. T. WIGAN, C.B., C.M.G., D.S.O., M.P., Danbury Park, Chelmsford, Essex, for **Red Ensign** (vol. 29, p. 28), whole colour, born May 3, 1917, bred by H. V. M. Clark, Lyndays, Ingatstone, Essex; s. **Illustrious** 10289, d. **Wotton Red Egg** by **Red Cloud** 11818.

1647 R. N.—MRS. H. F. JEROME, Bilton Hall, Tockwith, York, for **Pioche**.

**Class 214.**—*Jersey Bulls, calved in 1918.* [6 entries.]

1855 I. (£10, & R. N. for Champion.<sup>2</sup>)—MISS C. BYNG LUCAS, Sutton House, Hord, Lewes, for **Culverden Pioneer**, mulberry, born April 18; s. **Pioneer's Noble** 12416, d. **La Sente's Fury** (vol. 28, p. 245) by **Self Acting** 11447.

1856 II. (£5.)—LADY LUDLOW, Luton Hoe, Beds., for **Fairy Lad**, whole colour (vol. 30, p. 123), born May 13; s. **Curtis Lad** 12261, d. **Fairness** by **China's Fairy Boy** 9869.

1853 III. (£3.)—J. G. DUGDALE, The Abbey, Cirencester, for **Bombshell** (vol. 30, p. 106), whole colour, born March 18, bred by Sir E. D. Stern, Fan Court, Chertsey; s. **Wotton Ashiel** 12404, d. **Belinda** by **Golden Bean** 9247.

1637 R. N.—MRS. EDGAR WATTS, Eastwood Park, Fairfield, Glos., for **Wotton Beautious Cloud** (vol. 30, p. 339).

**Class 215.**—*Jersey Bulls, calved in 1919.* [10 entries.]

1655 I. (£10.)—R. BRUCE WARD, Godinton, Ashford, Kent, for **Pilgrim**, broken colour, born April 14; s. **Prometheus** d. **Evergreen** (vol. 28, p. 86) by **Castillon's Prince** 11639.

1660 II. (£5.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for **Bayleaf's Boy** 5049, brown, born Jan. 11, bred by A. J. Norman, Trinity, Jersey; s. **The Old** 3318, d. **Bayleaf** 74th 22131 by **Financial Noble** 4842.

1661 III. (£3.)—LADY LUDLOW, Luton Hoe, Beds., for **Marston Cowslip**, whole colour, born June 17, bred by W. Wilkins, Long Marston, Tring; s. **General Cowslip** 10660, d. **Javas Witch** 23573 by **Beechside You'll Do** 5132.

1667 IV. (£2.)—BRIG.-GEN. J. T. WIGAN, C.B., C.M.G., D.S.O., M.P., Danbury Park, Chelmsford, Essex, for **Danbury Red King**, whole colour, born June 9; s. **Red Ensign**, d. **Mitylene** (vol. 27, p. 85) by **Topsy's Noble** 1011.

1662 R. N.—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for **Cardiff Favoray**.

H. G.—1859.

<sup>1</sup> £10 towards these Prizes were given by the English Jersey Cattle Society.  
<sup>2</sup> Champion Prize of £5 given by the English Jersey Cattle Society for the best Bull in Classes 213-215.

## Award of Live Stock Prizes at Darlington, 1920. xciii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 216.—*Jersey Cows (in-milk), calved in or before 1916.* [29 entries.]

- 1674 I. (410, & Champion.<sup>1</sup>)—MRS. EVELYN, Wotton House, Dorking, for *Dairymaid* (vol. 26, p. 267), whole colour, born June 1, 1912, calved March 29, 1920, bred by A. Ruggles Brice, Spains Hall, Braintree; s. Midsummer 11054, d. Daffodil 3rd by Royal Reward 9413.
- 1676 II. (45, R. N. for Champion,<sup>1</sup> & Special.<sup>2</sup>)—MRS. EVELYN, for *Wotton Pink May* (vol. 30, p. 400), broken colour, born July 25, 1916, calved May 31, 1920; s. Red Cloud 11818, d. Lady Mary by Royal Reward 9413.
- 1686 III. (43.)—MRS. RUDD, Felbridge Park Farm, East Grinstead, Sussex, for *Meadow Vale Pride* (vol. 29, p. 313), whole colour, born April 1, 1913, calved March 24, 1920, bred by H. L. Palmer, Gravelly, Jersey; s. Cyclone 3rd (11274), d. Regondame's Pride (13740) by Irvington (3638).
- 1690 IV. (42.)—R. BRUCE WARD, Godinton, Ashford, Kent, for *Restful 2nd* (vol. 26, p. 448), whole colour, born July 9, 1911, calved May 10, 1920, bred by Mrs. Eyres Monsell, Dumbleton, Evesham; s. Dorando 10221, d. Restful by Pedlar 8381.
- 1695 V. (42.)—MRS. EDGAR WATTS, Eastwood Park, Fairfield, Glouc., for *Duckwing* (vol. 24, p. 231), whole colour, born Aug. 30, 1910, calved April 29, 1920, bred by Mrs. Smith Barry, Pewsey; s. Golden Swan 10260, d. Daffodil by Groullie's Boy 6562.
- 1679 R. N.—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for *Sweet Rosa*.  
H. C.—1683. C.—1668, 1669, 1689.
- 1673 R. N. for Special.<sup>2</sup>—W. M. CAZALET, Fairlawne, Tonbridge, for *Fairlawne Hussy* (vol. 30, p. 273), broken colour, born Aug. 8, 1915, calved Feb. 19, 1920; s. Sir Toby 12154, d. Hussy 13th by MacDougal 5333.

### Class 217.—*Jersey Heifers (in-milk), calved in 1917.* [15 entries.]

- 1702 I. (410.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for *Reception's Heather* 3469, broken colour, born Jan. 10, calved May 19, 1920, bred by James Manning, St. Mary's Jersey; s. Reception's You'll Do 5124, d. Heather Moon (10892) by Plymouth Lad.
- 1704 II. (45.)—W. M. CAZALET, Fairlawne, Tonbridge, for *Rosy's General Maid*, broken colour, born May 22, calved May 14, 1920, bred by A. E. Le Blancq, St. Owen, Jersey; s. Rosy's General Cowslip (5369), d. Mill Maid 5th (19013).
- 1710 III. (43.)—R. BRUCE WARD, Godinton, Ashford, Kent, for *Maytham Pauline* (vol. 28, p. 1057), whole colour, born July 29, calved March 5, 1920, bred by the Rt. Hon. H. J. Tennant, Rolvenden, Kent; s. Stratheona 12772, d. Christmas Rush by Sweet Bread Lad 2nd 11560.
- 1705 R. N.—W. M. CAZALET, for *Frontiere's Maid*.  
H. C.—1701, 1705, 1706.

### Class 218.—*Jersey Heifers (in-milk), calved in 1918.* [13 entries.]

- 1715 I. (410.)—W. M. CAZALET, Fairlawne, Tonbridge, for *Ciddie Girl*, whole colour, born May 15, calved April 20, 1920, bred by J. Le Ruez, St. Owen, Jersey; s. The Cid 19473, d. Adela's Oxford Girl by Oxford Majesty 4057.
- 1720 II. (45.)—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for *Volunteer's Revival*, whole colour, born March 20, calved May 29, 1920, bred by J. Lucas, Jersey; s. Jersey Volunteer 8354, d. Revival 3rd 16925.
- 1722 III. (43, & Special.<sup>1</sup>)—MRS. RUDD, Felbridge Park Farm, East Grinstead, Sussex, for *Golden Duchess*, whole colour, born March 11, calved May 13, 1920; s. Fire King 12015, d. Goddington Duchess by Golden Chance's Noble 10236.
- 1717 IV. (42, & R. N. for Special.<sup>1</sup>)—MRS. EVELYN, Wotton House, Dorking, Surrey, for *Wotton Sand Maiden*, whole colour, born May 30, calved June 13, 1920; s. Wotton Sandy 12814, d. Wotton Readymade (vol. 30, p. 401) by Red Cloud 11188.
- 1712 R. N.—A. E. BOND, Wannerton Kidderminster, for *Cowslip's Hussy*.  
C.—1714.

### Class 219.—*Jersey Heifers, calved in 1919.* [11 entries.]

- 1726 I. (410.)—MRS. EVELYN, Wotton House, Dorking, for *Wotton Sandaisay*, whole colour, born June 21; s. Wotton Sandy 12814, d. Wotton Red Daisy by Red Cloud 11818.
- 1730 II. (45.)—MAJOR THE HON. HAROLD PEARSON, Cowdray Park, Mithurst, Sussex, for *Marston Lucinda*, broken fawn, born June 13, bred by W. Wilkins, Long Marston, Tring, Herts.; s. Sleeper 5448, d. Rosy Lucinda 3rd by Rosy's General Cowslip 5369.

<sup>1</sup> Champion Prize of £5 given by the English Jersey Cattle Society for the best Cow or Heifer in Classes 216-219.

<sup>2</sup> Special Prize of £10 given by the English Jersey Cattle Society for the best Cow in Class 216, bred by Exhibitor and sired in Great Britain or Ireland.

<sup>3</sup> Special Prize of £10 given by the English Jersey Cattle Society for the best Heifer in Classes 217 and 218, bred by Exhibitor and sired in Great Britain or Ireland.

# xciv *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1729 III. (£3.)—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for *Poppy 3rd*, whole colour, born May 19, bred by R. Barclay, High Leigh, Hoddesdon, Herts.; *s. Silverlock's Grand Duke 12768, d. Poppy 2nd.*  
 1733 IV. (£2.)—R. BRUCE WARD, Godinton, Ashford, Kent, for *Boselle*, whole colour, born April 19; *s. Bonz 12816, d. Capsella by Capiscum 10892.*  
 1731 R. N.—J. H. N. ROBERTS, Waybears Farm, Harefield, Middlesex, for *Masterman's*, *Per.*  
 H.C.—1732.

## Guernseys.<sup>1</sup>

N.B.—Unless otherwise stated, the numbers refer to the *English Guernsey Herd Book*.

**Class 220.—Guernsey Bulls, calved in or before 1917. [9 entries.]**

- 1736 I. (£10, & *Champion*.)—MRS. R. C. BAINBRIDGE, Elfordleigh, Plympton, S. Devon, for *Hamill of Marazion 3334*, fawn and little white, born Dec. 14, 1916, bred by Lady Margaret Boschen, Tregea, Terraswell, Cornwall; *s. Tregonning Good Friday 2nd 3861, d. Fancy 7834 by Kryngum 2016.*  
 1743 II. (£5.)—MRS. PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for *Prince of Vimiera 3577*, fawn and white, born June 27, 1917, bred by F. Belloir, Vimiera, St. Peters, Guernsey; *s. Valentines Honour of the Passee 3826, d. Dolly Gray 3rd of Vimiera 14728 P.S. R.G.A.S. by Flora's Sequel 2nd of Vimiera 2223 R.G.A.S.*  
 1741 III. (£3.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for *Murrell Governors King of L'Etiennerie 3765*, lemon, born April 8, 1917, bred by Mrs. F. Le Provost, L'Etiennere, Castel, Guernsey; *s. Governors Kings Prize 3473 P.S. R.G.A.S., Lily 2nd of Les Bordes 13263, P.S. R.G.A.S. by Governor of the Chene 1297 P.S. R.G.A.S.*  
 1744 E. N.—O. PORTMAN RUDECK, Valencia, Meath Green Lane, Horley, Surrey, for *Elfordleigh Regal*.  
 H.C.—1737.

**Class 221.—Guernsey Bulls, calved in 1918. [9 entries.]**

- 1751 I. (£10.)—MRS. PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for *Governor 4th Des Ruettes 3718*, fawn and white, born May 23, bred by Mrs. J. Nufel, Les Ruettes, St. Saviours, Guernsey; *s. Polly's Governor des Ruettes 3966 P.S. R.G.A.S., d. Beauty of the Ruettes 6831, P.S. R.G.A.S. by Golden Noble 2nd 1524 R.G.A.S.*  
 1748 II. (£5.)—G. F. FERRAND, Morland Hall, Alton, Hants, for *Victor 3rd of the Barras 4075*, fawn, born June 14, bred by T. Foss, The Barras, Vale, Guernsey; *s. Sequel's Mascot 3191 P.S. R.G.A.S., d. Moss Rose 6th of the Barras 9697 P.S. R.G.A.S. by Sequel's Monogram 1858 P.S. R.G.A.S.*  
 1749 III. (£3.)—THE EARL OF HAREWOOD, Harewood, Leeds, for *Hiawatha of Les Granites 3960*, fawn and white, born Feb. 1, bred by J. L. Le Page, Les Granites, Castel, Guernsey; *s. Valentines Honour of the Passee 3826, d. Lily of Les Bordes 3835 P.S. R.G.A.S.*  
 1745 R. N.—MRS. LIONEL CORBETT, Hockley House, Alresford, Hants, for *Fancy's Dream*.  
 H. C.—1747. G.—1753.

**Class 222.—Guernsey Bulls, calved in 1919. [11 entries.]**

- 1754 I. (£10, & E. N. for *Champion*.)—H. R. H. THE DUCHESS OF ALBANY, Claremont, Esher, Surrey, for *Claremont Eros 3870*, fawn and white, born Sept. 6th; *s. Wickham May King 3rd 3620, d. Hartfield Venus 8538 by Gay Boy 2020.*  
 1761 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for *Murrell Recruit 3965*, dark fawn, born June 26; *s. Murrell Governors King of L'Etiennerie 3765, d. Murrell Romance 13687 by Murrell Gay Boy 3193.*  
 1763 III. (£3.)—G. PREY SANDAY, Puddington Hall, Neston, Birkenhead, for *Puddington Jewel 4011*, fawn and white, born March 21, bred by P. Martineau, Broom Hall, Sunningdale, Berks.; *s. Hurst Freda's Jewel 2nd 5543, d. Ivy May Rose of the Mase 16225 by Governor of Carteret 342.*  
 1759 R. N.—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts, for *Golden Noble of the New Volante*.  
 H.C.—1760.

**Class 223.—Guernsey Cows (in-milk), calved in or before 1915. [10 entries.]**

- 1767 I. (£10, & E. N. for *Champion*.)—G. F. FERRAND, Morland Hall, Alton, Hants, for *Fussey's Dora 18036*, fawn, born July 21, 1912, calved March 5, 1920, bred by J. T. White, Rouseaillerie, St. Peter Port, Guernsey; *s. Clairvoyance Sequel 2279 P.S. R.G.A.S., d. Fussey 3688 P.S. R.G.A.S.*

<sup>1</sup> £40 towards these Prizes were given by the English Guernsey Cattle Society.

<sup>2</sup> *Champion Prize* of £5 given by the English Guernsey Cattle Society for the best Bull in Classes 220-222.

<sup>3</sup> *Champion Prize* of £5 given by the English Guernsey Cattle Society for the best Cow or Heifer in Classes 223-226.

## Award of Live Stock Prizes at Darlington, 1920. xcv

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1773 II. (£5.)—MRS PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for **Blue Bell of Goodnestone** 10493, fawn and white, born April 8, 1914, calved May 8, 1920, bred by H. Fitzwalter Plumtree, Goodnestone Park, Canterbury; s. Royal Sequel 2511, d. Ashburnham Blue Bell 7529 by Charmant of the Gron 1809.
- 1770 III. (£3.)—MRS. JERVOISE, Herriard Park, Basingstoke, for **Fanny du Foulon** 22nd, 10013, fawn and white, born July 3, 1911, calved May 16, 1920, bred by John Le Page, Hill Farm, St. Andrews, Guernsey; s. Alderney 2nd 2215 P.S., R.G.A.S., d. Fanny du Foulon 13th 5734 P.S., R.G.A.S.

- 1765 E. N.—MRS. LIONEL CORBETT, Hockley House, Alresford, Hants, for **Wickham Fancy** 8th, H.C.—1766.

**Class 224.—Guernsey Cows or Heifers (in-milk), calved in 1916 or 1917.**

[9 entries.]

- 1775 I. (£10, & Champion.)—H. R. H. THE DUCHESS OF ALBANY, Claremont, Essex, Surrey, for **Bosistow Golden Heart** 11887, fawn and white, born Feb. 23, 1916, calved June 5, 1920, bred by H. Herbert Latty, Bosistow, Porthcurnow, Cornwall; s. Tregunning Governor of the Bileqs 2866, d. Olive Belle 4813 P.S., R.G.A.S.
- 1776 II. (£5.)—H. R. H. THE DUCHESS OF ALBANY, for **Bosistow Victoria** 11890, fawn and white, born March 20, 1916, calved March 30, 1920, bred by H. Herbert Latty, Bosistow, Porthcurnow, Cornwall; s. Tregunning Governor of the Bileqs 2866, d. Bosistow Valentine 10516 by Godolphin Sambo 2430.
- 1781 III. (£3.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Silvia** 12088, lemon and white, born Feb. 14, 1917, calved May 24, 1920; s. Lynchmere Lord Roberts 2nd 2794, d. Ashburnham Slavey 8823 by Noble of La Rucette 2341.
- 1762 E. N.—G. PERCY SANDAY, Puddington Hall, Neston, Birkenhead, for **Down Landes Beauty** 2nd, H. C.—1777.

O.—1783.

**Class 225.—Guernsey Heifers, calved in 1918. [7 entries.]**

- 1787 I. (£10.)—MRS. PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for **Lynchmere Blue Bell** 13724, fawn and white, born April 24; s. Robert's Boys Sequel 2496, d. Blue Bell of Goodnestone 10493 by Royal Sequel 2511.
- 1786 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Dainty** 13775, lemon, born May 10; s. Murrell Fido 3916, d. Donata 7th of Warren Wood 9949 by Godolphin Bar Gold 2136.
- 1783 III. (£3.)—G. PERCY SANDAY, Puddington Hall, Neston, Birkenhead, for **Lynchmere Lottie** 2nd 15727, lemon, born Jan. 30, bred by Mrs. Pratt Barlow, Lynchmere House, Haslemere; s. Gay Lud 2nd of Le Briquet 3131, d. Lottie of Goodnestone 3rd 10812 by Golden Casket 3rd 2586.
- 1789 E. N.—F. J. WYTHES, Coppell Hall, Epping, Essex, for **Lady Blanchette of Lilyvale**, C.—1784.

**Class 226.—Guernsey Heifers, calved in 1919. [8 entries.]**

- 1794 I. (£10.)—MRS. JERVOISE, Herriard Park, Basingstoke, for **Lady 2nd of Roceque** Balan 14533, fawn and white, born July 19, bred by H. Hurford, Guernsey; s. Valentines Honour of the Passee 3426, d. Lady Richmond 2nd of St. Leddards 13876 P.S., R.G.A.S. by D'Arcy 2727 P.S., R.G.A.S.
- 1795 II. (£5.)—MRS. JERVOISE, for **Mulberry 4th of Bel Air** 14616, fawn and white, born Jan. 21, bred by the Hon. R. C. Molesworth, Hotel Bel Air, Sark; s. My Delight of Park Farm 3753 P.S., R.G.A.S., d. Mulberry of Bel Air 9087 P.S., R.G.A.S. by Defender 2152 P.S., R.G.A.S.
- 1793 III. (£3.)—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts., for **Stagenhoe Rose of Gold** 4th 14979, fawn and white, born March 6; s. Stagenhoe Governor 3465, d. Stagenhoe Rose of Gold 11893.
- 1791 E. N.—MRS. R. C. BAINBRIDGE, Elfordleigh, Plympton, S. Devon, for **Elfordleigh Patricia**, H. C.—1797.

## Kerries.<sup>2</sup>

N.B.—In the Kerry Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the Irish Kerry Herd Book. A number without brackets indicates that the animal is registered in the English Kerry Herd Book.

**Class 227.—Kerry Bulls, calved in or before 1918. [3 entries.]**

- 1799 I. (£10, & R. N. for Champion.)—LADY FITZGERALD, Buckland, Faringdon, Berks, for **Buckland Battle**, born Sept. 29, 1918; s. Minley Victory 406, d. Valencia Kitty 2096 by Duv Ratmore 280.

<sup>1</sup> Champion Prize of £5 given by the English Guernsey Cattle Society for the best Cow or Heifer in Classes 223-226.

<sup>2</sup> £25 towards these Prizes were given by the English Kerry and Dexter Cattle Society.

<sup>3</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 227-231.



xcvi *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor"]

1801 **IL**. (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for Mangerton Gortmore Drops 2nd 389, black, born Jan. 24, 1917, bred by T. Waite Highlands, Redhill; s. Kilmona Lord 29th 341, d. Mangerton Drops 2nd 65 by Shamrock Brian Boroim 332.

1800 **R. N.**—L. HARRISON & Co., LTD., Coolham, Shipley, Sussex, for Mangerton Dermot 4th.

**Class 228.**—*Kerry Bulls, calved in 1919.* [5 entries.]

1802 **I**. (£10.)—L. HARRISON & Co., LTD., Coolham, Shipley, Surrey, for Valencia Linksman 961, born April 24, bred by The Knight of Kerry, Valencia Island, Co. Kerry; s. Valencia Chieftain 806, d. Valencia Meta (5122) by Valencia Lord 1st (782).

1803 **IL**. (£5.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for Dauntless of Carton, born May 16, bred by the Duke of Leinster, Carton Maynooth, Co. Kildare; s. Valencia Harold 908, d. Mab of Carton 429 by Prince of Carton 771.

1805 **R. N.**—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for Hattingley Hero.  
H. C.—1804.

**Class 229.**—*Kerry Cows (in-milk), calved in or before 1916.*  
[8 entries.]

1814 **I**. (£10, & Champion.)—CAPTAIN NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for Minley Mistress 1253 F.S., black, born 1908, calved May 20, 1920.

1810 **IL**. (£5.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for Gort Primrose 8th, born March 16, 1914, calved April 20, 1920, bred by D. M. Battray, Gortmaskhey, Ballybunion, Co. Kerry; s. Gort Peter 688, d. Gort Primrose 3rd (342) by Gort Earl (697).

1807 **R. N.**—L. HARRISON & Co., LTD., Coolham, Shipley, Sussex, for Coquet Delchick.  
H. C.—1800, 1811, 1813.

**Class 230.**—*Kerry Heifers (in-milk), calved in 1917 or 1918.*  
[5 entries.]

1815 **I**. (£10.)—LADY FITZGERALD, Buckland, Faringdon, Berks, for Buckland Blue Bell, born April 17, 1918, calved June 2, 1920; s. Minley Victory 405, d. Valencia Bell 2139.

1819 **IL**. (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for Castle Lough Cowalp 4th 2238, born March 3, 1917, calved June 13, 1920, bred by J. Hilliard, Killyharney; s. Castle Lough Dermott 377, d. Castle Lough Cowalp 3rd (746) by Castle Lough Rover 2023.

1817 **R. N.**—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for Vaddy Oona 2nd.  
H. C.—1818, 1818.

**Class 231.**—*Kerry Heifers (not in-milk), calved in 1918 or 1919.*  
[6 entries.]

1823 **I**. (£10.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for Vaddy Mourne 3rd, born March 10, 1919, bred by Mrs. E. Robertson, Doglean, Limavady, Co. Derry; s. Vaddy Warre 419, d. Vaddy Mourne 2nd 2089 by Vaddy Burntollet 308.

1824 **IL**. (£5.)—JOHN W. TOWLER, for Vaddy Mourne, born April 11, 1918, bred by Mrs. E. Robertson, Doglean, Limavady, Co. Derry; s. Vaddy Burntollet 2nd 788, d. Vaddy Mourne (1080) by Gort Sheen 3rd (599).

1825 **R. N.**—CAPTAIN NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for Hattingley Hope.  
H. C.—1822.

## Dexters.<sup>2</sup>

*N.B.—In the Dexter Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the Irish Dexter Herd Book. A number without brackets indicates that the animal is registered in the English Dexter Herd Book.*

**Class 232.**—*Dexter Bulls, calved in or before 1918.* [9 entries.]

1829 **I**. (£10, & Champion.)—H. G. JONES, Downford, Mayfield, Sussex, for Downford Dandy 655, born in Jan. 1918, bred by R. Tait Robertson, The Hutch, Malahide, Co. Dublin.

1830 **IL**. (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for Fillongley Forester 630, born May 20, 1917; s. General Manager 623, d. Fillongley Fancy 2240.

<sup>1</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 227-231.

<sup>2</sup> £25 towards these Prizes were given by the English Kerry and Dexter Cattle Society.

<sup>3</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 232-234.

## Award of Live Stock Prizes at Darlington, 1920. , xcvi

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1838 III. (£3.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for **La Mancha Victory** 669, born Jan. 27, 1918, bred by R. Tait Robertson, The Hutch, Malahide, Co. Dublin; s. La Mancha Goodluck 566, d. Slane Black Sally 2387 by Gort Tony 8rd (598).
- 1839 R. N.—MRS. H. R. PELLY, Lyndseys Farm, Ingatestone, Essex, for **April Fool**.  
H. C.—1831. O.—1827.

### Class 233.—*Dexter Bulls, calved in 1919.*

[6 entries.]

- 1840 I. (£10.)—R. TAIT ROBERTSON, The Hutch, Malahide, Co. Dublin, for **La Mancha Maader**, red, born July 12, bred by Joseph O'Brien, Doneycarney, Co. Dublin; s. La Mancha Tiny Tim 668, d. La Mancha Golden Crest 2187.
- 1839 II. (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Forest Fire**, born August 29; s. Fillongley Forester 630; d. Gloriana 2492 by Barrow Orphan 498.
- 1838 R. N.—ALFRED C. KING, Braishfield Manor, Romsey, Hampshire, for **Braishfield Golden Rule**.  
H. C.—1836. 1837.

### Class 234.—*Dexter Cows (in-milk), calved in or before 1916.*

[12 entries.]

- 1849 I. (£10. & R. N. for Champion.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Faith**, born Feb. 10, 1916, calved June 13, 1920; s. General Manager 523, d. Granny 2250 by Goodfellow 410.
- 1847 II. (£5.)—ALFRED C. KING, Braishfield Manor, Romsey, Hampshire, for **La Mancha Madeline**, 2272, born in March, 1913, calved May 17, 1920, breeder unknown.
- 1845 R. N. H. G. JONES, Downford, Mayfield, Sussex, for **Downford Ruellia**.  
H. C.—1844, 1846, 1848, 1851.

### Class 235.—*Dexter Heifers (in-milk), calved in 1917 or 1918.*

[7 entries.]

- 1857 I. (£10.)—THEO. A. STEPHENS, Hookstile House, South Godstone, Surrey, for **Light Heart** 2461, born April 13, 1917, calved March 29, 1920, breeder unknown.
- 1856 II. (£5.)—THEO. A. STEPHENS, for **Lady Elsie** 2642, red, born March 21, 1917, calved April 4, 1920, breeder unknown.
- 1855 R. N.—F. P. PEYTON, Woodcote Lodge, Kenilworth, for **Patti 5th**.  
H. C.—1833.

### Class 236.—*Dexter Heifers (not in milk), calved in 1918 or 1919.*

[8 entries.]

- 1863 I. (£10.)—H. G. JONES, Downfield, Mayfield, Sussex, for **Downfield Dittany** 2612, born in June, 1918, breeder unknown.
- 1866 II. (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Fury**, born Dec. 9, 1918; s. Fillongley Financier 603, d. Fillongley Fiend 2117.
- 1861 R. N.—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for **La Mancha Sweetheart**.  
H. C.—1865. 1867. C.—1862.

## Shetland Cattle.\*

### Class 237.—*Shetland Cows, in-milk.* [4 entries.]

- 1870 I. (£10.)—R. W. R. MACKENZIE, Earlsall, Leuchars, Fife, for **Oiney of Earlsall**, light dun, born Dec. 25, 1914, calved May 10, 1920; s. Tollman of Earlsall 85, d. Onbelia of Earlsall 227 by Young Victor of Earlsall 29.
- 1871 II. (£5.)—MRS. R. M. PUNSHON, Ingley House, Northallerton, for **Winkle**, black and white, born April 5, 1917, calved Jan. 19, 1920; s. Jacques 114, d. Mona of Ingley 498.

### Class 238.—*Shetland Heifers, calved in 1918 or 1919.* [3 entries.]

- 1872 I. (£10.)—R. W. R. MACKENZIE, Earlsall, Leuchars, Fife, for **Maggie of Earlsall**, light dun, born April 18, 1919; s. Rob Johnson, d. Melby Mona.
- 1874 II. (£5.)—JOHN ROBSON, Newton, Bellingham, for dun, born in 1918, bred by Mrs. Anderson, Hillswick, Shetland.

\* Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 232-236.

\* Prizes given by a Member of the R.A.S.E.

## xviii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Dairy Cattle of Shorthorn Type.<sup>1</sup>

Class 239.—*Dairy Cows, in-milk, 3 years old or over.* [12 entries.]

- 1879 I. (£20).—GEORGE HARRISON, Gainford Hall, Darlington, for *Towason*, roan, age unknown, calved Oct. 28, 1919.  
 1880 II. (£10).—J. MOFFAT, Spital, Kendal, for *Daisy*, roan, age unknown, calved June 11, 1920.  
 1884 III. (£5).—WALTER WILSON, Kide-side Farm, Milnthorpe, for *Daisy*, roan, age unknown, calved June 16, 1920.  
 1885 IV. (£3).—WALTER WILSON, for *Sweet Rose*, red and white, age unknown, calved June 11, 1920.  
 1881 R. N. J. MOFFAT, for *Fillpail*.  
 H. C.—1886. C.—1875.

Class 240.—*Dairy Heifers, in-milk, under 3 years old.* [3 entries.]

- 1889 I. (£10).—J. F. NELSON & CO. Cockerham Hall, Garstang, Lancs., for *Milkmaid*, roan, born in 1918, calved May 30, 1920.  
 1883 II. (£5).—JOHN EVENS & SON, Burton, Lincoln, for *Burton Diligent*, red, born in Oct. 1917, calved May 26, 1920; bred by C. J. C. Hill, Gt. Gt. Gt. Lincoln.  
 1887 III. (£3).—BOLCKOW, VAUGHAN & CO., LTD., Westerton Farm, Middlesbrough-on-Tees, for *Westerton Belle*, red, born in 1917, calved June 6, 1920; s. *Merry Chief* 2nd, d. *Westerton Beauty* by *Mead 100184*.

### Milk Yield Prizes.

Class 241.—*Dairy Shorthorn Cows or Heifers.* [44 entries.]

- 1002 I. (£10, & Champion).<sup>2</sup>—J. M. STRICKLAND, Bainesse, Catterick, Yorks, for *Keyingham Dairy Maid* 5th, roan, born Jan. 2, 1913, calved June 8, 1920, bred by T. J. Tuton, Keyingham, Hull; s. *Brandsby Aristocrat* 107889, d. *Keyingham Dairy Maid* 4th by *Brandsby Lord* Derwent 9th 101618.  
 1001 II. (£5).—C. & E. STEPHENSON, LTD., Burton House Farms, Stafford, for *Rosannah* 6th (vol. 58, p. 727), red and little white, born Dec. 10, 1911, calved May 18, 1920, bred by J. H. Large, Cradwell Manor, Malmesbury; s. *King Copper* 109069, d. *Rosannah* 2nd by *Master Walton* 86585.  
 1009 III. (£3).—JOHN A. WILLS, for *Carleton Queen* 7th. (See Class 135.)  
 1005 R. N.—THE DUKE OF WESTMINSTER, for *Bare Charm*. (See Class 135.)  
 H. C.—986, 990, 996, 997, 998, 1006, 1008, 1010, 1013, 1019, 1020, 1024, 1026, 1027, 1029, 1038, 1039, 1044, 1045, 1048, 1049, 1054.

Class 242.—*Non-Pedigree Dairy Shorthorn Cows or Heifers.*

[No entry.]

Class 243.—*Lincolnshire Red Shorthorn Cows or Heifers.* [16 entries.]

- 1127 I. (£10).—JOHN EVENS & SON, for *Burton Fillingham*. (See Class 145.)  
 1117 II. (£5).—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for *Kerdiston Phoebe* 10th, born Jan. 23, calved May 31, 1920, bred by G. W. Bartle, Kerdiston, Norwich; s. *Burton Colt* 4th 9663, d. by *Kirmington Jameson* 8th 8660.  
 1112 III. (£3).—JOHN EVENS & SON, for *Burton Cherry* 3rd. (See Class 144.)  
 1122 R. N.—STANLEY BLUNDELL, for *Bendish Marcia* 2nd. (See Class 145.)  
 H. C.—1120, 1123, 1124, 1125, 1126.

Class 244.—*Devon Cows or Heifers.*<sup>3</sup> [9 entries.]

- 1252 I. (£10).—W. G. BUSK, Wraxall Manor, Dorchester, for *Wraxall Fancy* A405, born in 1909, calved May 17, 1920, breeder unknown.  
 1251 II. (£5).—W. G. BUSK, for *Suffragette* 1st. (See Class 160.)  
 1255 III. (£3).—JOHN H. CHICK, for *Wynford Pill*. (See Class 160.)  
 1253 R. N.—R. A. CLARKE & SONS, Manor Farm, Chisleborough, Stoke-under-Ham, Somerset, for *Lady* 1st.  
 H. C.—1250.

Class 245.—*South Devon Cows or Heifers.* [5 entries.]

- 1281 I. (£10).—JOHN COAKER, for *Primrose*. (See Class 165.)  
 1283 II. (£5).—JAMES ISMAY, Twyne Manor, Blandford, for *Countess* 6th 15330, born Jan. 1, 1915, calved June 1, 1920, bred by S. S. Horton, Lixton, Loddiswell, Devon; s. *Norman* 3510, d. *Countess* 7802.

<sup>1</sup> Prizes given by the Darlington Local Committee.

<sup>2</sup> Champion Prize of £30, with £5 to the Reserve Number, given by a Society interested in the production of milk, for the Cows obtaining the highest number of points in the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian Milk Yield Competitions.

<sup>3</sup> Prizes given by the Devon Cattle Breeding Society.

## Award of Live Stock Prizes at Darlington, 1920. xcix

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 246.—*Longhorn Cows or Heifers*. [3 entries.]

- 1301 I. (£10.)—W. HANSON SALE, for Arden Cinderella. (See Class 170.)  
 1302 II. (£5.)—W. HANSON SALE, for Grace 15th. (See Class 170.)

### Class 247.—*Red Poll Cows or Heifers*. [10 entries.]

- 1303 I. (£10.)—CAPT. A. RICHARDSON, Seven Springs, Cheltenham, for Kettleburgh Rosie 4th A 23572, born April 24, 1912, calved June 3, 1920; bred by W. G. Waite, Kettleburgh Hall; s. Free Trader 10023, d. Kettleburgh Rosie 4th A 22636 by Lionel 9711.  
 1304 II. (£5.)—CAPT. A. RICHARDSON, for Stowupland Columbyne 25371, born July 18, 1915, calved April 9, 1920, bred by G. Carter, Stowupland, Stowmarket; s. Herontye Daryson 10421, d. Woolverstone 21511 by Fruitful 9574.  
 1309 III. (£3.)—THE MARCHIONESS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for Gressenhall Rosa 25620, born Dec. 27, 1914, calved May 21, 1920, bred by J. E. Hill, Gressenhall, East Dereham; s. Unique 10339, d. Rose 4th by Cedric 6061.  
 1391 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading, for Kettleburgh Rosie 2nd.  
 H. C.—1390, 1398.

### Class 248.—*Ayrshire Cows or Heifers*. [4 entries.]

- 1541 I. (£10, & R. N. for Champion.)—WILLIAM GIBSON, Moorside Farm, Worston, Clitheroe, Lancs., for Moorside Acacia 32527, brown, born April 23, 1912, calved May 13, 1920; s. Willoxton St. John 8053, d. Willoxton Jean 2nd 2741 by Willoxton Morrison 7154.  
 1542 II. (£5.)—WILLIAM GIBSON, for Moorside Atlanta 3rd. (See Class 206a.)

### Class 249.—*British Friesian Cows or Heifers*. [15 entries.]

- 1588 I. (£10, & R. N. for Champion.)—WALTER GRAINGER, Temple Farm, Carnaby, Bridlington, Yorks, for Eske Violet 17094, born March 1, 1914, calved May 31, 1920, bred by the Exora of John Humble, High Eske, Beverley; s. Routh Commander 567, d. Eske Sunshine 960.  
 1594 II. (£5.)—W. & R. WALLACE, Knobworth, Herts., for Dorney Billa 20752, born Feb. 23, 1915, calved June 6, 1920, bred by G. J. Rembold, Manor Farm, Dorney, Windsor; s. Greenhill Prince 1377, d. Dorney Bella 720 by Upton Sandow 605.  
 1584 III. (£3.)—A. & J. BROWN, Hedges Farm, St. Albans, Herts., for Hedges Friesland Queen 14988, born Nov. 13, 1913, calved June 8, 1920; s. Hedges Champion of Champions 371, d. Hedges Pretty Queen 1868 by Hedges Prince 1a a renee 303.  
 1608 R. N.—ALBERT WRIGHTMAN, Middle Herrington Dairy Farm, Sunderland, for Pomona Audrey.  
 H. C.—1583, 1585, 1587, 1607.

### Class 250.—*Jersey Cows or Heifers*. [24 entries.]

- 1673 I. (£10, & Champion.)—W. M. CAZALET, Fairhawe, Tonbridge, for Fairlawne Hussy (vol. 30, p. 273), broken colour, born Aug. 8, 1914, calved Feb. 19, 1920; s. Sir Toby 12154, d. Hussy 13th by MacDougal 9333.  
 1689 II. (£5.)—H. BRUCE WARD, Godinton, Ashford, Kent, for Ida (vol. 28, p. 277), whole colour, born March 15, 1914, calved Feb. 4, 1920, bred by Major J. Baldwin, Alvechurch, Worcestershire; s. Antidote 10813, d. Mutilin by Marshal MacMahon 9605.  
 1669 III. (£3.)—CAPT. C. B. BALFOUR, C.B., Newton Don, Kelso, for Moona (vol. 28, p. 310), whole colour, born Feb. 24, 1914, calved March 15, 1920; s. Kathleen's Majesty 11019, d. Moxhata by Lily's Prince 10331.  
 1693 R. N.—DR. HERBERT WATNEY, Buckhold, Pangbourne, Berks., for Sabina Goose 2nd.  
 H. C.—1674, 1683, 1685, 1684, 1691, 1692, 1694, 1695, 1708.

### Class 251.—*Guernsey Cows or Heifers*. [10 entries.]

- 1775 I. (£10.)—H.R.H. THE DUCHESS OF ALBANY, for Bosistow Golden Heart. (See Class 224.)  
 1771 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for Donata 7th of Warren Wood 9049, lemon and white, born Jan. 21, 1913, calved May 14, 1920, bred by the late J. I. Small, Warren Wood, Hayes, Kent; s. Godolphin Bar Gold 2136, d. Donnington Eversweet 6113 by Donnington Lad 1369.  
 1776 III. (£3.)—H.R.H. THE DUCHESS OF ALBANY, for Bosistow Victoria. (See Class 224.)  
 1766 R. N.—JAMES W. FELL, Stressholme Farm, Darlington, for Governors Dairymaid 10649, dark lemon and white, born Jan. 19, 1913, calved Feb. 23, 1920, bred by W. Simmons, Governors, Truro; s. Albans Pride 2225, d. Milkmaid 7777 by Tregonning King 1782.  
 H. C.—1767, 1770, 1783.

<sup>1</sup> Champion Prize of £30, with £5 to the Reserve Number, given by a Society interested in the production of milk for the Cows obtaining the highest number of points in the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian Milk Yield Competitions.

<sup>2</sup> Champion Prize of £20, with £5 to the Reserve Number, given by a Society interested in the production of milk, for the Cows obtaining the highest number of points in the Ayrshire, Jersey and Guernsey Milk Yield Competitions.

## c Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 252.—*Kerry Cows or Heifers.* [7 entries.]

- 1814 I. (£10, & Champion.<sup>1</sup>)—CAPT. NELSON ZAMBRA, M.C., for *Minley Mistress*. (See Class 229.)  
 1813 II. (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for *Castle Lough Nina* 2109, born March 3, 1915, calved April 4, 1920, bred by J. Hilliard, Killarney; s. *Castle Lough Duke* 2nd (766), d. *Castle Lough Neta* (3866) by *Castle Lough William* (701).  
 1810 III. (£3.)—JOHN W. TOWLER, for *Gort Primrose* 8th. (See Class 229.)  
 1807 E. N.—L. HARRISON & CO. LTD., Coolham, Shipley, Sussex, for *Coquet Debschick*. H. C.—1809, 1811, 1812.

### Class 253.—*Dexter Cows or Heifers.* [8 entries.]

- 1847 I. (£10, & R. N. for Champion.<sup>1</sup>)—ALFRED O. KING, for *La Mancha Madeline*. (See Class 234.)  
 1846 II. (£5.)—MRS. IL. J. NUTT, Hampton House, Hampden-in-Arden, for *Barrow Bracelet* 4th 2298, born Aug. 4, 1914, calved April 6, 1920, bred by H. M. Gibbs, Barrow Court, Bristol; s. *Barrow Bacchus* 419, d. *Barrow Bracelet* 1726.

## Butter Tests.

### Class 254a.—*Cows exceeding 900 lb. live weight.*<sup>2</sup>

[94 entries A and B.]

- 1673 I. (£15, & G. M.<sup>3</sup>)—W. M. CAZALET, for *Fairlawne Hussey*. (See Class 250.)  
 1669 II. (£10, & R. N. for Champion.<sup>1</sup>)—CAPT. C. B. BALFOUR, C.B., for *Moona*. (See Class 250.)  
 1281 III. (£5.)—JOHN COAKER, for *Primrose*. (See Class 156.)  
 1693 (B. M.<sup>4</sup>)—DR. HERBERT WATNEY, Buckhold, Pangbourne, Berks, for *Sabina* Goose 2nd.

**Certificates of Merit.**<sup>4</sup>—1689, 1691, 1692, 1694, 1695, 1708.

H. C.—1009, 1010, 1920, 1048, 1112, 1120, 1123, 1126, 1127, 1252, 1301, 1541, 1588, 1770.

### Class 254b.—*Cows not exceeding 900 lb. live weight.*<sup>2</sup>

- 1686 I. (£15.)—MRS. RUDD, for *Meadow Vale Pride*. (See Class 218.)  
 1083 II. (£10.)—MAJOR THE HON. HAROLD PEARSON, Cowdray Park, Midhurst, Sussex, for *Plymouth Lady* (vol. 30, p. 351), mulberry, born May 31, 1914, calved April 25, 1920, bred by Viscount Cowdray, Cowdray Park; s. *Redskin* 11822, d. *La Villane Lady* by *Plymouth Lad* 9538.  
 1674 III. (£5.)—MRS. EVELYN, for *Dairymaid*. (See Class 218.)  
 H. C.—1810.

### Class 255.—*Dairy Shorthorn Cows or Heifers.*<sup>5</sup> [42 entries.]

- 1009 I. (£10.)—JOHN A. WILLIS, for *Carleton Queen* 7th. (See Class 133.)  
 998 II. (£5.)—OLYMPIA AGRICULTURAL CO., LTD., for *Bright Aster*. (See Class 135.)  
 1010 III. (£3.)—CAPT. ARNOLD S. WILLS, Phorby Hall, Northampton, for *Duchess of Cranford* 3rd (vol. 35, p. 1184), red, born Oct. 29, 1906, calved June 3, 1920, bred by the late George Taylor, Cranford, Middlesex; s. *Beau Sabreur* 74049, d. *Duchess of Armathwaite* 4th by *Golden Robin* 68718.  
 996 E. N.—MAJOR G. J. RYTON, for *Castel Maid*. (See Class 135.)  
 H. C.—1006, 1024, 1048.

## GOATS.<sup>6</sup>

### Class 256.—*Male Goats, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, over 2 years old.* [5 entries.]

- 1800 I. (£3.)—MRS. MARRI, GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for *Ruritania Hawthorne*, born Feb. 24, 1918, bred by Miss Woxford, Silkworth House, Sunderland; s. *Sedberge Romulus* 738, d. *Ruritania Lavender* 886.

<sup>1</sup> Champion Prize of £10, with £5 to the Reserve Number, given by a Society interested in the production of milk, for the Cows obtaining the highest number of points in the Kerry and Dexter Milk Yield Competitions.

<sup>2</sup> Prizes given by the English Jersey Cattle Society.

<sup>3</sup> Gold Medal, Silver Medal, and Bronze Medal given by the English Jersey Cattle Society for the three Jersey animals obtaining the greatest number of points in the Butter Tests.

<sup>4</sup> Certificates of Merit given by the English Jersey Cattle Society for Jersey Cows, not being Prize Winners, obtaining the following points:—Cows five years old and upwards 35 points; Cows under five years old 30 points.

<sup>5</sup> Prizes given by the Dairy Shorthorn Association.

<sup>6</sup> Towards these Prizes £13 15s. were given by the Darlington Local Committee and £21 by the British Goat Society.

## Award of Live Stock Prizes at Durlington, 1920. ci

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 1893 II. (£2.)—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for **Edenbreck Marcus** 833, born June 11, 1916, bred by Mrs. Pickard, Ed-nbreck, Lancaster; s. Wignmore Tato 704, d. Forest Minnikin 591 by Coxhill Noodle 526.  
 1894 III. (£1.)—A. B. SMITH, Romanby House, Northallerton, for **Townbeam Cigar** 5286, born in 1917, bred by Miss Alexander, Stockwell House, Knarborough; s. Grange Granite 2363, d. Daffodil by Sedgemere Cardinal 1215.

**Class 257.—Male Goats, any other variety, over 2 years old. [8 entries.]**

- 1898 I. (£3, & Champion.)—MRS. CHETWODE, Levington Manor, Alresford, Hants, for **Grange Granite** 2363, Anglo-Nubian-Swiss, born March 13, 1914, bred by M. F. Mitchell, Grange House, Levenshulme, Manchester; s. Wignmore Topary 2040, d. Hawthorne Granite 2256 by Holly Lodge Blue Granite 227.  
 1902 II. (£2.)—MRS. J. C. STRAKER, The Leazes, Hexham, for **Ciester Heartstone** 2599, cross bred, born March 25, 1916, bred by Countess Bathurst; s. Grange Granite, d. Cirencester Fortuna.  
 1895 III. (£1.)—MISS G. M. BALLANTINE-DYKES, Rosemary Hill, Chilworth, Surrey, for **Pythley Merry Tom** 4037, Anglo-Nubian-Swiss, born March 11, 1918, bred by Mrs. Soames, Long Buckley Wharf, Rugby; s. Performer 2552, d. Pythley Merripen by Leaze's Lucky Steyne.  
 1901 R. N.—MRS. J. C. STRAKER, for **Leazes Harvest**.

**Class 258.—Male Goats, any variety, above 1 year, and not exceeding 2 years old. [11 entries.]**

- 1912 I. (£3, & R. N. for Champion.)—MRS. G. SOAMES, Long Buckley Wharf, Rugby, for **Pythley Caruso** 3523, British Alpine, born Feb. 19, 1919; s. Champion Proud 2853, d. Mayfield Carmen 2759 by Cherub.  
 1904 II. (£2.)—BARONESS BURTON, Doehfour, Inverness, for **Doehfour Arrogance** 3503, Anglo-Nubian-Swiss, born Feb. 18, 1919; s. Champion Proud 2853, d. Rockcrest Mollie 3958 by Colthorne Nectarine 1648.  
 1910 III. (£1.)—MISS BERYL S. P. PARMENTER, Didge-mere Hall, Roydon, Essex, for **Didge-mere Douglas** 3650, Anglo-Nubian-Swiss, born Jan. 30, 1919, bred by Mrs. Brownell; s. Leaze's Lucky Halton 2753, d. Withdean Jeta 2155 by Leaze's Luck 1754.  
 1909 IV. (10s.)—MISS BERYL S. P. PARMENTER, for **Prophet of Bashley** 3775, Anglo-Nubian-Swiss, born May 6, 1919, bred by Miss Pope, Bashley Lodge, New Milton, Hants; s. Edenstead Pluck 3007, d. Problem of Bashley 3076 by Proud 2853.  
 1911 R. N.—MISS K. PALLY, Theydon Place, Epping, Essex, for **Theydon Angus**.

**Class 259.—Male Kids, any variety, not exceeding 1 year old. [13 entries.]**

- 1928 I. (£3.)—E. A. WALMSLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Havta, for **Athersone Prior**, British Alpine, born Feb. 19, 1920; s. Tramedda Sir Galuhad, d. Prudent of Bashley 3074 by Proud 2853.  
 1913 II. (£2.)—MRS. MADEL GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for **Herne Bay Black Prince** 1260, Anglo-Nubian, born Feb. 18, 1920; s. Ruritania Hawthorne 1059, d. Brentmoor Buntly 1031 by Edenbreck Mida's 749.  
 1916 III. (£1.)—MISS C. CHAMBERLAIN, Westons, Lyndhurst, Hants, for **Wayward of Westons** 7609, Anglo-Nubian-Swiss, born April 8, 1920; s. Edenstead Pluck 3007, d. Prelude of Bashley 3071 by Proud 2853.  
 1917 IV. (10s.)—MRS. MADEL GRACE, for **Herne Bay Premier** 1265, Anglo-Nubian, born Feb. 23, 1920; s. Herne Bay Chancellor 1183, d. Nash Maggie 197 by Woodlands Marauder.  
 1923 R. N.—MRS. HARRY POTTON, The Homestead, Rayleigh, Essex, for **Sadberge Seneca**. H. C.—1925.

**Class 260.—Female Goats, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, over 2 years old. [18 entries.]**

- 1939 I. (£3.)—MISS K. PALLY, Theydon Place, Epping, Essex, for **Regius Aganippe** 865, born Jan. 4, 1915, kidded May 8, 1920, bred by H. King, The White Cottage, Lenham, Kent; s. Wignmore Norman 582, d. Forest Bellona 673 by Forest Rectus 540.  
 1932 II. (£2.)—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for **Sadberge Mavis** 817, born March 17, 1915, kidded April 7, 1920; s. Sadberge Romulus 735, d. Sadberge Phalarope 679 by Sedgemere Viking 536.  
 1933 III. (£1.)—MRS. REGINALD PEASE, for **Sadberge Brambling** 924, born May 6, 1916, kidded March 10, 1920; s. Sledwick Bernard 813, d. Bricket Beryl 622 by Bricket Viking 367.  
 1945 R. N.—MRS. C. L. PICKARD, Middle Brow Top, Quernmore, Lancaster, for **Edenbreck Tansy**. C.—1936.

<sup>1</sup> Challenge Certificate given by the British Goat Society for the best Male Goat.

## cii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

### **Class 261.**—*Female Goats, Swiss or Anglo-Swiss, over 2 years old.* [9 entries.]

1947 I. (£3.)—MISS MARJORIE HENDERSON, The Riding, Hexham, for **Riding Crocus** 367, born April 5, 1917, kidded April 12, 1920; s. Sedgemere Paris 2nd 292, d. Leazes Corbel 313 by Cophthorne Billikin 274.

1950 II. (£2.)—MRS. J. C. STRAKER, The Leazes, Hexham, for **Leazes Ally** 389, born Feb. 24, 1918, kidded April 17, 1920; s. Brendon Friday 349, d. Halton Heclub 270 by Le Castor 240.

1951 III. (£1.)—MRS. J. C. STRAKER, for **Leazes Harmony** 380, born Feb. 23, 1918, kidded April 13, 1920; s. Brendon Friday 343, d. Leazes Haddon 320 by Sedgemere Paris 2nd 292.

1952 E. M.—MRS. STRAKER, for **Leazes Haddon**.  
H. C.—1945.

### **Class 262.**—*Female Goats, British Alpine, over 2 years old.* [7 entries.]

1957 I. (£8, & Champion.)—MRS. G. SOAMES, Long Buckby Wharf, Rugby, for **Pythley Cinerella** 2788, born Jan. 26, 1917, kidded April 18, 1920; s. Performer 2532, d. Mayfield Carmen 2638 by Cherub.

1958 II. (£2.)—MISS BERYL S. P. PARWINTER, Didgeemere Hall, Roydon, Essex, for **Preference** 2778, born March 28, 1917, kidded March 1<sup>st</sup>, 1919, bred by Miss Pope, Bawley Lodge, New Milton, Hants; s. Leazes Lucky Halton 2575, d. Prejudice 2500 by Champion Leazes Luck 1754.

1959 III. (£1.)—MRS. J. C. STRAKER, The Leazes, Hexham, for **Leazes Crest** 2525, born Feb. 17, 1916, kidded April 13, 1920; s. Leazes Lucky Steyne 1839, d. Rock Crest Mawley 3858.

1960 E. M.—MRS. J. C. STRAKER, for **Leazes Lupin**.

### **Class 263.**—*Female Goats, any other variety, over 2 years old.* [30 entries.]

1971 I. (£3, & Champion.)—MISS MARJORIE HENDERSON, The Riding, Hexham, for **Riding Thistle** 2693, Anglo-Nubian-Toggenburg, born May 9, 1917, kidded May 1, 1920; s. Performer 2553, d. Wigmore Tulip 2193 by Cophthorne Torpedo 2336.

1964 II. (£2.)—BARONESS BURTON, Dochfour, Inverness, for **Leazes Pearl** 2516, Anglo-Nubian-Swiss, born May 1, 1915, kidded May 22, 1920, bred by Mrs. Straker, The Leazes, Hexham; s. Leazes Treasure 2247, d. Leazes Lady Fortune 2173 by Broxbourne Adrial 1947.

1965 III. (£1.)—MRS. J. C. STRAKER, The Leazes, Hexham, for **Leazes Kidstone** 2965, cross bred, born June 26, 1917, kidded Feb. 27, 1920; s. Ciceter Hearthstone 2599, d. Leazes Kiddie 2513 by Leazes Lucky Steyne 1839.

1968 IV. (10s.)—E. A. WALMSLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants, for **Atherstone Faith** 3338, Anglo-Nubian-Swiss, born May 3, 1918, kidded March 13, 1920; s. Grange Granite 2869, d. Buckholt Francesa 2656 by Woodfalls Francis.

1976 V. (10s.)—MRS. REGINALD PRASE, Sledwick, Barnard Castle, for **Sadberge Whooper Swan**, born Feb. 5, 1917, kidded Feb. 25, 1920; s. Sledwick Barnard 813, d. Leda.

1990 E. M.—E. A. WALMSLEY, for **Towcester Gladys**.  
H. C.—1969, 1982, 1986. C.—1963, 1978.

### **Class 264.**—*Goatlings, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, above 1 year and not exceeding 2 years old.* [5 entries.]

1993 I. (£3, & B. M.)—MISS K. PELL, Theydon Place, Epping, Essex, for **Theydon Amber**, 1137, born Feb. 22, 1919; s. Sadberge Marcus Coriolanus 1003, d. Regius Arganippe 895 by Wigmore Norman 562.

1994 II. (£2.)—MISS K. PELL, for **Theydon Marcella** 1139, born Feb. 8, 1919; s. Sadberge Marcus Coriolanus 1003, d. Theydon Myrtle 909 by Sedgemere Georgius 689.

1991 III. (£1.)—WILLIAM SMART HORNE, Nash Court, Westwell, Ashford, Kent, for **Nash Baroness** 1242, born April 7, 1919; s. Edenbreck Danus 843, d. Nash Bella 1112, by Edenbreck Midas 740.

1992 E. M.—MRS. REGINALD PRASE, Sledwick, Barnard Castle, for **Sadberge Kestrel**.  
H. C.—1995.

### **Class 265.**—*Goatlings, any other variety, above 1 year and not exceeding 2 years old.* [11 entries.]

2000 I. (£3, & R. N. for B. M.)—THE DUCHESS OF NEWCASTLE, Clumber Park, Workington, Notts, for **Oadby Chloe** 3744, Anglo-Swiss, born Feb. 17, 1918, bred by Miss C. J. Billson; s. Cotswold Remus 2365, d. Oadby Myrtle 2657 by Leazes Luck 1754.

<sup>1</sup> Challenge Certificate given by the British Goat Society for the best Female Goat that has borne a Kid.

<sup>2</sup> Bronze Medal given by the British Goat Society for the best Goatling.

## Award of Live Stock Prizes at Darlington, 1920. ciii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor,"]

- 2002 II. (£2.)—MISS BERTY S. P. PARMENTER, Didgemere Hall, Roydon, Essex, for *Didgemere Duchess* 4502, Anglo-Nubian-Swiss, born May 6, 1919; s. Grange Granite 2999, d. Withelean Countess 2855 by Leazes Lucky Halton 3575.
- 2004 III. (£1.)—E. A. WALMSLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants, for *Threepenny* 3876, Anglo-Nubian-Swiss, born April 16, 1919, bred by Lady Arthur Cecil, The Mount, Lymington, Hants.; s. Proud 2853, d. Beaufront Three Spots 849.
- 1998 R. N.—MISS MARJORIE HENDERSON, The Riding, Hexham, Northumberland, for *Riding Tulip*.  
H. C.—1997, 2005.
- Class 266.—<sup>1</sup>*Female Kids, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, not exceeding 1 year old.*  
[10 entries.]
- 2010 I. (£3, & R. N. for B. M.)—MRS. MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, for *Herne Bay Princess* 1203, born Feb. 16, 1920; s. Ruritania Hawthorne 1059, d. Brentmoor Buntly 1031 by Edenbreck Midas 740.
- 2016 II. (£2.)—MISS K. PELLY, Theydon Place, Epping, Essex, for *Theydon Crystal* 1271, born Feb. 4, 1920; s. Sadberge Marcus Coriolanus 1003, d. Sledwick Chloe 918 by Sadberge Berserker 678.
- 2008 III. (£1.)—MRS. MABEL GRACE, for *Herne Bay Patty* 1203, born Jan. 30, 1920; s. Ruritania Hawthorne 1059, d. Nash Eva 856 by Scrivinton Budget.
- 2014 R. N.—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for *Sadberge Rook*.  
H. C.—2015.

Class 267.—*Female Kids, any other variety, not exceeding 1 year old.*  
[16 entries.]

- 2020 I. (£3, & B. M.)—MRS. G. SLOANER, Long Buckby Wharf, Rugby, for *Pytchley Comet* 4021, British Alpine, born Jan. 23, 1920; s. Pytchley Caruso 3529, d. Mayfield Carmen 2538 by Chubb.
- 2020 II. (£2.)—N. CRADDOCK, Sandhutton, Thirsk, Yorks, for *Sandhutton Simonette* 4085, Anglo-Nubian-Swiss, born Feb. 24, 1920; s. Ockwells Pan 5600, d. Ockwells Simplicity 2956 by Wild Dragon Fly 508.
- 2025 III. (£1.)—MISS BERTY S. P. PARMENTER, Didgemere Hall, Roydon, Essex, for *Didgemere Dulcie*, Anglo-Nubian-Swiss, born March 9, 1920; s. Prophet of Bashley 3715, d. Withelean Countess 2855 by Leazes Lucky Halton 3575.
- 2029 IV. (10s.—1. E. WALMSLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants, for *Atherstone Dinah*, Anglo-Nubian-Swiss, born Feb. 28, 1920; s. Puck of Bashley 3605, d. Halstead Enid 3274 by Zoyland Benson 2873.
- 2026 R. N.—CYRIL R. PAYNE, Pegglesworth Hall, Andoversford, Glos, for *Pytchley Skittles*.

### Milk Yield Prizes.

Class 268.—*Milk Yield Prizes, open to Goats, the property of Cottagers within a radius of 20 miles of the Darlington Town Hall, who pay a rental of £10 and under.*  
[No entry.]

Class 269.—*Goats that have previously won a 1st, 2nd or 3rd Prize in any Milking Competition.*  
[7 entries.]

- 1999 I. (£3.)—SAM FOSTON, 21, St. Wulfrid's Road, Hexham, for *Blossom, Toggenburg*, born March 28th, 1917, kidded April 5th, 1920, bred by W. Hind, How Mill, Cumberland.
- 1923 II. (£2.)—MRS. MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for *Brentmoor Buntly* 1031, born March 29, 1917, kidded Feb. 16, 1920, bred by W. S. Horne, Nash Court, Westwell, near Ashford; s. Edenbreck Midas 740, d. Nash Maggie 807 by Woodlands Marander 742.
- 1964 III. (£1.)—BARONESS BURTON, for *Leazes Pearl*. See Class 263.

Class 270.—*Goats, not eligible for Class 269.*  
[33 entries.]

- 1922 I. (£3, & Champion.)—MRS. HARRY POTTEN, The Homestead, Rayleigh, Essex, for *Honeymaid Dainty* 2388, Anglo-Nubian-Swiss, born March 31, 1913, kidded April 12, 1920, bred by George Walker, Honeymead, Wendover, Bucks; s. Klito 272, d. Videx 2071, by Cythorne Victor 1564.
- 1965 II. (£2, & R. N. for Champion.)—MRS. J. C. STRAEER, The Leazes, Hexham, for *Leazes Kidstone*. (See Class 263.)
- 1952 III. (£1.)—MRS. J. C. STRAEER, for *Leazes Haddon* 320, born April 4, 1915, kidded March 24, 1920; s. Sedgemere Paris 2nd 292, d. Halton Hagar 248 by Romura 195.

<sup>1</sup> Bronze Medal given by the British Goat Society for the best Kid.

<sup>2</sup> The "Dewar" Twenty-Guinea Challenge Trophy given by the British Goat Society for the Goat entered in either the General, or Toggenburg section of the Herd Book winning the highest number of points in the Milking Classes.



## civ *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### SHEEP.

#### Oxford Downs.

##### Class 271.—*Oxford Down Shearling Rams.* [14 entries.]

- 2041 I. (£10), & 2042 III. (£3).—HUGH W. STILGOE, The Grounds, Adderbury, Banbury.  
 2036 II. (£5).—FREDERICK PENSON, Taston, Charlbury, Oxon.  
 2033 R. N. CAPTAIN R. B. BRASSEY, Heythrop Park, Chipping Norton.  
 H.C.—2037, 2040. C.—2043, 2045.

##### Class 272.—*Oxford Down Ram Lambs.*<sup>1</sup> [9 entries.]

- 2047 I. (£10), & 2048 R. N.—HENRY AKERS & CO., Mount House, Black Bourton, Clarendon, Oxon.  
 2053 II. (£5).—FREDERICK PENSON, Taston, Charlbury, Oxon.  
 2032 III. (£3). THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.  
 H.C.—2051, 2053. C.—2040, 2054.

##### Class 273.—*Three Oxford Down Ram Lambs.* [10 entries.]

- 2061 I. (£10), & 2062 III. (£3). THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.  
 2058 II. (£5).—HENRY AKERS & CO., Mount House, Black Bourton, Clarendon, Oxon.  
 2064 R. N.—SYDNEY READING, Langford, Lechlade, Glos.  
 H.C.—2063. C.—2057.

##### Class 274.—*Three Oxford Down Shearling Ewes.* [7 entries.]

- 2088 I. (£10).—FREDERICK PENSON, Taston, Charlbury, Oxon.  
 2066 II. (£5).—CAPTAIN R. B. BRASSEY, Heythrop Park, Chipping Norton, Oxon.  
 2070 III. (£3).—HUGH W. STILGOE, The Grounds, Adderbury, Banbury.  
 2072 R. N.—WILLIAM TREVEATHAN, Hill House Farm, Northleach, Glos.  
 H.C.—2069, 2071.

##### Class 275.—*Three Oxford Down Ewe Lambs.* [9 entries.]

- 2077 I. (£10).—THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.  
 2073 II. (£5).—HENRY AKERS & CO., Mount House, Black Bourton, Clarendon, Oxon.  
 2090 III. (£3), & 2079 R. N.—SYDNEY READING, Langford, Lechlade, Glos.  
 H.C.—2081. C.—2074.

### Shropshires.<sup>2</sup>

##### Class 276.—*Shropshire Two-Shear Rams.* [7 entries.]

- 2087 I. (£10).—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury, for Eytton Rex.  
 2082 II. (£5).—AMBROSE SALISBURY BERRY, Shenstone Hall, Lichfield, Staffs.  
 2084 III. (£3).—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.  
 2088 R. N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 H.C.—2085, 2086.

##### Class 277.—*Shropshire Shearling Rams.* [18 entries.]

- 2083 I. (£10).—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.  
 2104 II. (£5).—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury.  
 2100 III. (£3).—K. W. MILNES, The Field, Hereford.  
 2081 IV. (£2).—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury.  
 2105 R. N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 H.C.—2080, 2082, 2102. C.—2084, 2089.

##### Class 278.—*Three Shropshire Shearling Rams.* [8 entries.]

- 2114 I. (£15).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 2109 II. (£10).—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.  
 2108 III. (£5).—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury.  
 2111 R. N.—K. W. MILNES, The Field, Hereford.  
 H.C.—2112. C.—2107, 2110.

##### Class 279.—*Shropshire Ram Lambs.* [9 entries.]

- 2123 I. (£10).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 2122 II. (£5).—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury.  
 2117 III. (£3).—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.  
 2120 R. N.—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.  
 H.C.—2119. C.—2121.

<sup>1</sup> Prizes given by the Oxford Down Sheep Breeders' Association.

<sup>2</sup> £80 towards these Prizes were given by the Shropshire Sheep Breeders' Association.

## Award of Live Stock Prizes at Durlington, 1920. cv

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 280.—Three Shropshire Ram Lambs. [7 entries.]

- 2130 I. (£10.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 2129 II. (£5.)—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury.  
 2128 III. (£3.)—K. W. MILNES, The Field, Hereford.  
 2127 R. N.—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.

### Class 281.—Three Shropshire Shearling Ewes. [7 entries.]

- 2137 I. (£10.)—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury.  
 2134 II. (£5.)—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.  
 2131 III. (£3.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury.  
 2133 R. N.—COLONEL HENRY HOWARD, C.B., Wygfair, St. Asaph.  
 C.—2135.

### Class 282.—Three Shropshire Ewe Lambs. [8 entries.]

- 2139 I. (£10.)—RICHARD ELWYN DIRCH, Maes Elwy, St. Asaph.  
 2144 II. (£5.)—EDWARD CRAIG TANNER, Eytton-on-Severn, Shrewsbury.  
 2143 III. (£3.)—K. W. MILNES, The Field, Hereford.  
 2142 R. N.—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.  
 C.—2138.

## Southdowns.

### Class 283.—Southdown Two-Shear Rams.<sup>1</sup> [11 entries.]

- 2151 I. (£10, & R. N. for Champion.)—R. S. HICKS, Wilbraham Temple, Cambs.  
 2147 II. (£5.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2149 III. (£3.)—LADY FITZGERALD, Buckland, Faringdon, Berks.  
 2152 R. N.—LADY LUDLOW, Luton Hoo, Beds.  
 H. C.—2155. C.—2146, 2153.

### Class 284.—Southdown Shearling Rams. [14 entries.]

- 2163 I. (£10, & Champion.)—LADY FITZGERALD, Buckland, Faringdon, Berks.  
 2160 II. (£5.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2157 III. (£3.)—HIS MAJESTY THE KING, Sandringham.  
 2165 R. N.—REGINALD S. HICKS, Wilbraham Temple, Cambs.  
 H. C.—2167. C.—2168, 2170.

### Class 285.—Three Southdown Shearling Rams.<sup>1</sup> [7 entries.]

- 2175 I. (£10.)—REGINALD S. HICKS, Wilbraham Temple, Cambs.  
 2174 II. (£5.)—LADY FITZGERALD, Buckland, Faringdon, Berks.  
 2172 III. (£3.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2177 R. N.—THE DUKE OF RICHMOND AND GORDON, K.G., Goodwood, Chichester.  
 H. C.—2176. C.—2171.

### Class 286.—Three Southdown Ram Lambs. [12 entries.]

- 2182 I. (£10.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.  
 2183 II. (£5.)—LADY FITZGERALD, Buckland, Faringdon, Berks.  
 2180 III. (£3.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2181 IV. (£2.)—THE EARL OF DENBY, K.G., Hatchfield Farm, Newmarket.  
 2188 R. N.—THE DUKE OF RICHMOND AND GORDON, K.G., Goodwood, Chichester.  
 H. C.—2187. C.—2186.

### Class 287.—Three Southdown Shearling Ewes. [8 entries.]

- 2185 I. (£10, & Champion.) R. S. HICKS, Wilbraham Temple, Cambs.  
 2192 II. (£5, & R. N. for Champion.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2196 III. (£3.)—LADY LUDLOW, Luton Hoo, Beds.  
 2193 R. N.—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.  
 H. C.—2197. C.—2194.

### Class 288.—Three Southdown Ewe Lambs. [12 entries.]

- 2203 I. (£10.)—LADY FITZGERALD, Buckland, Faringdon, Berks.  
 2200 II. (£5.)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.  
 2202 III. (£3.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.  
 2201 IV. (£2.)—THE EARL OF DENBY, K.G., Hatchfield Farm, Newmarket.  
 2207 R. N.—BERNARD OPPENHEIMER, Sefton Park, Stoke Poges, Bucks.  
 H. C.—2203. C.—2206.

<sup>1</sup> Prizes given by the Southdown Sheep Society.  
<sup>2</sup> Champion Gold Medal, value £10 10s. (or £10 10s. in cash) given by the Southdown Sheep Society for the best Ram in Classes 283 and 284.  
<sup>3</sup> Silver Medal (or £1 in cash) given by the Southdown Sheep Society for the best Pen of Ewes or Ewe Lambs in Classes 287 and 288.

cvi *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Hampshire Downs.

- Class 289.—Hampshire Down Two-Shear Rams.**<sup>1</sup> [4 entries.]  
 2211 I. (£10), & 2212 R. N.—GEORGE PHILIPPI, Crawley Court, Winchester, for Crawley No. 75 & Crawley No. 72.  
 2210 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke.  
 C.—2218.

- Class 290.—Hampshire Down Shearling Rams.** [12 entries.]  
 2215 I. (£10), & 2216 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke.  
 2214 III. (£3.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.  
 2218 R. N.—PENDLEY STOCK FARMS, Pendley, Tring, Herts.  
 H.C.—2222, 2223. C.—2217, 2219.

- Class 291.—Hampshire Down Ram Lambs.**<sup>1</sup> [12 entries.]  
 2236 I. (£10, & R. N. for Champion.<sup>2</sup>)—V. T. THOMPSON, Norton Manor, Sutton Scotney.  
 2238 II. (£5.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.  
 2234 III. (£3.)—GEORGE PHILIPPI, Crawley Court, Winchester.  
 2239 IV. (£2.)—MRS. JERVOISE, Herriard Park, Basingstoke.  
 2231 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading.  
 H.C.—2232, 2235, 2237. C.—2230, 2233.

- Class 292.—Three Hampshire Down Ram Lambs.** [10 entries.]  
 2240 I. (£10, & Champion.<sup>2</sup>)—MRS. JERVOISE, Herriard Park, Basingstoke.  
 2246 II. (£5.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.  
 2238 III. (£3.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.  
 2244 R. N.—PENDLEY STOCK FARMS, Pendley, Tring, Herts.  
 H.C.—2243, 2245. C.—2241, 2247.

- Class 293.—Three Hampshire Down Shearling Ewes.** [5 entries.]  
 2250 I. (£10.)—PENDLEY STOCK FARMS, Pendley, Tring, Herts.  
 2252 II. (£5.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.  
 2248 III. (£3.)—MRS. JERVOISE, Herriard Park, Basingstoke.

- Class 294.—Three Hampshire Down Ewe Lambs.** [10 entries.]  
 2261 I. (£10.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.  
 2255 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke.  
 2259 III. (£3.)—PENDLEY STOCK FARMS, Pendley, Tring, Herts.  
 2260 R. N.—GEORGE PHILIPPI, Crawley Court, Winchester.  
 H.C.—2253. C.—2256, 2262.

### Suffolks.

- Class 295.—Suffolk Two-Shear Rams.**<sup>1</sup> [4 entries.]  
 2265 I. (£10), & 2266 III. (£5.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.  
 2263 II. (£5.)—CHIVERS & SONS, LTD., Histon, Cambs., for Histon Playford.

- Class 296.—Suffolk Shearling Rams.** [6 entries.]  
 2271 I. (£10), & 2272 II. (£5.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.  
 2270 III. (£3.)—S. R. SHERWOOD, Playford, Ipswich, for Playford Senator.  
 2267 R. N.—R. L. BARCLAY, Higham, Bury St. Edmunds, for Higham Victor, Ist.

- Class 297.—Suffolk Ram Lambs.** [14 entries.]  
 2281 I. (£10), & 2282 IV. (£2.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.  
 2280 II. (£5.)—G. BETTRAM SHIELDS, Dolphingtons, Tranent, East Lothian.  
 2279 III. (£3.)—S. R. SHERWOOD, Playford, Ipswich.  
 2274 R. N.—THE RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.  
 H.C.—2278. C.—2285.

- Class 298.—Three Suffolk Ram Lambs.** [10 entries.]  
 2286 I. (£10.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.  
 2283 II. (£5.)—S. R. SHERWOOD, Playford, Ipswich.  
 2287 III. (£3.)—ROBERT L. BARCLAY, Higham, Bury St. Edmunds.  
 2281 IV. (£2.)—WILLIAM F. PAUL, Kirtou Lodge, Ipswich.  
 2288 R. N.—RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.

<sup>1</sup> Prizes given by the Hampshire Down Sheep Breeders' Association.

<sup>2</sup> Champion Prize of £10 given by the Hampshire Down Sheep Breeders' Association for the best Ram Lamb, Pen of Ram Lambs or Ewe Lambs in Classes 291, 292 and 294.

<sup>3</sup> Prizes given by the Suffolk Sheep Society.

## Award of Live Stock Prizes at Darlington, 1920. cvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 299.—Three Suffolk Shearling Ewes. [4 entries.]

- 2297 I. (£10.)—CHIVERS & SONS, LTD., Histon, Cambs.  
 2298 II. (£5.)—WILLIAM F. PAUL, Kirton Lodge, Ipswich.  
 2298 III. (£3.)—A. PRESTON JONES, Mickleover House, Derby.

### Class 300.—Three Suffolk Ewe Lambs. [11 entries.]

- 2299 I. (£10.)—HERBERT F. SMITH, The Grange, Walton, Ipswich.  
 2302 II. (£3.)—RT. HON. SIR ERNEST CASSELL, Moulton Paddocks, Newmarket.  
 2307 III. (£3.)—S. R. SHERWOOD, Playford, Ipswich.  
 2306 IV. (£2.)—WILLIAM F. PAUL, Kirton Lodge, Ipswich.  
 2303 E. N.—CHIVERS & SONS, LTD., Histon, Cambs.  
 H. C.—2301. C.—2308.

## Dorset Horns.<sup>1</sup>

### Class 301.—Dorset Horn Shearling Rams, born on or after November 1, 1918. [3 entries.]

- 2313 I. (£10), & 2314 II. (£5.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

### Class 302.—Three Dorset Horn Ram Lambs, born on or after November 1, 1919. [3 entries.]

- 2316 I. (£10, & Champion.<sup>2</sup>)—G. A. & R. A. KINGSWELL, Wellow Farm, Yarmouth, Isle of Wight.  
 2315 II. (£5.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.  
 2317 III. (£3.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

### Class 303.—Three Dorset Horn Shearling Ewes, born on or after November 1, 1918. [2 entries.]

- 2318 I. (£10.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.  
 2319 II. (£5.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

### Class 304.—Three Dorset Horn Ewe Lambs, born on or after November 1, 1919. [3 entries.]

- 2321 I. (£10, & E. N. for Champion.<sup>2</sup>)—G. A. & R. A. KINGSWELL, Wellow Farm, Yarmouth, Isle of Wight.  
 2320 II. (£5.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.  
 2322 III. (£3.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

## Ryelands.<sup>3</sup>

### Class 305.—Ryeland Rams, Two-Shear and upwards. [7 entries.]

- 2323 I. (£10.)—FRIEND & RENWICK, The Weald, Sevenoaks, for Brasted Matchless.  
 2328 II. (£5.)—DAVID J. THOMAS, Talachddu Brecon, for Clytha Instep.  
 2327 III. (£3.)—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells, for Talachddu Model.  
 2326 E. N.—WM. PARKIN-MOORE, Whitehall, Mealsgate, Cumberland, for Hustler.  
 H. C.—2325. C.—2324.

### Class 306.—Ryeland Shearling Rams. [17 entries.]

- 2335 I. (£10.)—F. T. GOUGH, Lugwardine, Hereford, for Lugwardine Sparklet.  
 2343 II. (£5.)—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells, for Brasted Cahetts.  
 2337 III. (£3.)—C. H. HOBBS, Oldport, Oswestry, for Oldport Merrymaker.  
 2345 E. N.—DAVID J. THOMAS, Talachddu, Brecon, for Talachddu Client.  
 H. C.—2339. C.—2334.

### Class 307.—Three Ryeland Ram Lambs. [8 entries.]

- 2348 I. (£10.)—F. T. GOUGH, Lugwardine, Hereford.  
 2353 II. (£5), & 2354 E. N.—J. R. NORMAN WATERS, Fawke Farm, Sevenoaks, Kent.  
 2347 III. (£3.)—FRIEND & RENWICK, The Weald, Sevenoaks, Kent.  
 H. C.—2350. C.—2351.

<sup>1</sup> £18 towards these Prizes were given by the Dorset Horn Sheep Breeders' Association.

<sup>2</sup> Champion Silver Medal given by the Dorset Horn Sheep Breeders' Association for the best exhibit of Dorset Horn Sheep in Classes 301 to 304.

<sup>3</sup> £27 towards these Prizes were given by the Ryeland Flock Book Society.

cviil Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 308.—Three Ryeland Shearling Ewes.** [9 entries.]

- 2357 I. (£10).—F. T. GOUGH, Lugwardine, Hereford.  
 2358 II. (£5). & 2359 III. (£3).—FRIEND AND RENWICK, The Weald, Sevenoaks, Kent.  
 2362 R. N.—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells.  
 H. C.—2360. C.—2353.

**Class 309.—Three Ryeland Ewe Lambs.** [5 entries.]

- 2364 I. (£10).—FRIEND & RENWICK, The Weald, Sevenoaks, Kent.  
 2368 II. (£5).—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells.  
 2365 III. (£3).—F. T. GOUGH, Lugwardine, Hereford.

**Kerry Hill (Wales).<sup>1</sup>**

**Class 310.—Kerry Hill (Wales) Rams, Two-Shear and upwards.** [7 entries.]

- 2389 I. (£10).—WILLIAM ALDERSON, Glanmiheli, Kerry, Mont., for *Pentrenant Magnet*.  
 2374 II. (£5), & 2373 R. N.—THE EARL OF POWIS, Powis Castle, Welshpool, for *Pentrenant Napier*.  
 2375 III. (£3).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.

**Class 311.—Kerry Hill (Wales) Shearling Rams.** [7 entries.]

- 2382 I. (£10), & 2381 III. (£3).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 2376 II. (£5).—WILLIAM ALDERSON, Glanmiheli, Kerry, Mont.  
 2377 R. N.—MAJOR DAVID DAVIES, M.P., Bronelirion, Llandinam, for *Dinam's Nonsuch*.

**Class 312.—Kerry Hill (Wales) Ram Lamb.** [6 entries.]

- 2388 I. (£10).—THE EARL OF POWIS, Powis Castle, Welshpool.

**Class 313.—Three Kerry Hill (Wales) Shearling Ewes.** [6 entries.]

- 2394 I. (£10).—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.  
 2393 II. (£5).—THE EARL OF POWIS, Powis Castle, Welshpool.  
 2389 III. (£3).—MAJOR DAVID DAVIES, M.P., Bronelirion, Llandinam, Mont.

**Lincolns.<sup>2</sup>**

**Class 314.—Lincoln Two-Shear Rams.** [13 entries.]

- 2404 I. (£10, & R. N. for Champion.<sup>3</sup>)—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber, for *Horkstow Manor Pointon*.  
 2385 II. (£5).—JOSEPH BROCKLEBANK, Carlton le Moorland, Newark, for *Firsby Advance*.  
 2399 III. (£3).—J. H. DEAN & SONS, Heath House, Nocton, Lincoln, for *Kirmington Best*.  
 2398 R. N.—J. H. DEAN & SONS, for *Beaufoe Heath*.  
 H. C.—2406. C.—2405.

**Class 315.—Lincoln Shearling Rams.** [19 entries.]

- 2421 I. (£10 & Champion.<sup>3</sup>)—CHARLES E. HOWARD, Nocton Rise, Lincoln.  
 2423 II. (£5).—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.  
 2413 III. (£3), & 2412 IV. (£2).—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.  
 2425 R. N.—W. H. WATSON, Temple Bruer, Lincoln.  
 H. C.—2415. C.—2409, 2410.

**Class 316.—Five Lincoln Shearling Rams.** [12 entries.]

- 2451 I. (£15).—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.  
 2435 II. (£10).—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.  
 2438 III. (£5).—W. H. WATSON, Temple Bruer, Lincoln.  
 2453 IV. (£2).—ANSELL B. HOLT, Home Farm, Sturton, Brigg, Lincs.  
 2428 R. N.—JOSEPH BROCKLEBANK, Carlton-le-Moorland, Newark.

**Class 317.—Three Lincoln Ram Lambs.** [9 entries.]

- 2447 I. (£10).—W. H. WATSON, Temple Bruer, Lincoln.  
 2444 II. (£5).—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.  
 2441 III. (£3).—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.  
 2439 R. N.—THOMAS CAMPION, Carr House, East Heslerton, York.  
 H. C.—2443. C.—2440.

<sup>1</sup> £20 towards these Prizes were given by the Kerry Hill (Wales) Flock Book Society.

<sup>2</sup> £48 towards these Prizes were given by the Lincoln Long-Wool Sheep Breeders Association.

<sup>3</sup> Champion Prize of £5 given by the Lincoln Long-Wool Sheep Breeders' Association for the best Ram in Classes 314 and 315.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- Class 318.**—*Three Lincoln Shearling Ewes.* [9 entries.]  
 2452 I. (£10.)—CHARLES E. HOWARD, Nocton Rise, Lincoln.  
 2448 II. (£5.) & 2449 R. N. J. H. DEAN & SONS, Heath House, Nocton, Lincoln.  
 2456 III. (£3.)—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.  
 H. C.—2450 C.—2456.

- Class 319.**—*Three Lincoln Ewe Lambs.* [7 entries.]  
 2463 I. (£10.)—W. H. WATSON, Temple Bruer, Lincoln.  
 2459 II. (£5.) & 2458 III. (£3.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.  
 2460 R. N.—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.  
 H. C.—2457.

### Leicesters.<sup>1</sup>

- Class 320.**—*Leicester Shearling Rams, Two Shear and upwards.* [4 entries.]  
 2464 I. (£10. & R. N. for Champion<sup>2</sup>), & 2465 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington.  
 2467 II. (£5.)—CHARLES C. WRAY, East Flotmanby, Filey, for King's Champion.

- Class 321.**—*Leicester Shearling Rams.* [7 entries.]  
 2472 I. (£10. & Champion<sup>2</sup>), 2473 II. (£5.) & 2474 R. N.—EXORS OF E. F. JORDAN, Eastburn, Driffield.  
 2468 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington.

- Class 322.**—*Three Leicester Ram Lambs.* [2 entries.]  
 2476 I. (£10.)—GEORGE HARRISON, Gainford Hall, Darlington.  
 2475 II. (£5.)—ROBERT N. GOODALL, West Flotmanby, Filey, Yorks.

- Class 323.**—*Three Leicester Shearling Ewes.* [3 entries.]  
 2478 I. (£10.) & 2479 II. (£5.)—EXORS OF E. F. JORDAN, Eastburn, Driffield.  
 2477 III. (£3.)—ROBERT N. GOODALL, West Flotmanby, Filey, Yorks.

- Class 324.**—*Three Leicester Ewe Lambs.* [2 entries.]  
 2480 I. (£10.) & 2481 II. (£5.)—GEORGE HARRISON, Gainford Hall, Darlington.

### Border Leicesters.<sup>3</sup>

- Class 325.**—*Border Leicester Rams, Two Shear and upwards.* [6 entries.]  
 2486 I. (£10.)—R. G. MURRAY & SON, Spittal, Biggar, for Spittal One Hundred.  
 2487 II. (£5.)—WILLIAM R. ROSS, Milton of Culloden, Inverness, for Lord Richmond.  
 2484 III. (£3.)—W. J. GLAHOME, Little Houghton, Lesbury, for St. Roman.  
 H. C.—2483 C.—2482.

- Class 326.**—*Border Leicester Shearling Rams.* [11 entries.]  
 2497 I. (£10. & Champion<sup>4</sup>), & 2496 III. (£3.)—R. G. MURRAY & SON, Spittal, Biggar.  
 2498 II. (£5.)—WILLIAM R. ROSS, Milton of Culloden, Inverness.  
 2488 R. N.—THE RT. HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.  
 H. C.—2492 C.—2491.

- Class 327.**—*Border Leicester Ewes, Two Shear and upwards (with their lamb at foot).* [3 entries.]

- 2501 I. (£10. & R. N. for Champion<sup>4</sup>)—WILLIAM R. ROSS, Milton of Culloden, Inverness.  
 2500 II. (£5.)—R. G. MURRAY & SON, Spittal, Biggar.  
 2499 III. (£3.)—THE RT. HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.

- Class 328.**—*Border Leicester Shearling Ewes.* [7 entries.]  
 2508 I. (£10.)—WILLIAM R. ROSS, Milton of Culloden, Inverness.  
 2507 II. (£5.)—R. G. MURRAY & SON, Spittal, Biggar.  
 2502 III. (£3.)—THE RT. HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.  
 2505 R. N.—W. J. GLAHOME, Little Houghton, Lesbury, Northumberland.

<sup>1</sup> £28 towards these Prizes were given by the Leicester Sheep Breeders' Association.

<sup>2</sup> Champion Silver Medal given by the Leicester Sheep Breeders' Association for the best Ram in Classes 320 and 321.

<sup>3</sup> £20 towards these Prizes were given by the Society of Border Leicester Sheep Breeders.

<sup>4</sup> Perpetual Challenge Cup given by the Society of Border Leicester Sheep Breeders for the best Ram or Ewe in Classes 325-328. A Gold Medal will be given by the Society of Border Leicester Sheep Breeders to the winner of the Challenge Cup.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Wensleydales.<sup>1</sup>**

**Class 329.**—*Wensleydale Rams, Two-Shear and upwards.* [9 entries.]

- 2516 I. (£10.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale, for Ripon Blue.  
 2516 II. (£5.)—LORD HAWKE, Wighill Park, Tadcaster, for Wighill Wonder.  
 2518 III. (£3.)—JOHN HARGRAVE, Wath, Ripon, for Admiral Blue.  
 2513 R. N.—WILLIAM DINSDALE, Low Bolton, Redmire, Yorks, for Captain Gibsta.  
 H. C.—2517.

**Class 330.**—*Wensleydale Shearling Rams.* [8 entries.]

- 2521 I. (£10, & Champion.\*)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk.  
 2519 II. (£5.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.  
 2525 III. (£3.)—JOHN A. WILLIS, Manor House, Carperby, Yorks.  
 2520 R. N.—RICHARD CHESTER, Low Moor Farm, Ripon.  
 H. C.—2521. C.—2518.

**Class 331.**—*Three Wensleydale Shearling Rams.* [8 entries.]

- 2530 I. (£10) & 2529 III. (£3.)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk.  
 2538 II. (£5.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.  
 2532 R. N.—JOHN A. WILLIS, Manor House, Carperby, Yorks.  
 H. C.—2527. C.—2524.

**Class 332.**—*Three Wensleydale Shearling Ewes.* [7 entries.]

- 2536 I. (£10, & R. N. for Champion.†)—WILLIAM DINSDALE, Low Bolton, Redmire.  
 2537 II. (£5.)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk.  
 2534 III. (£3.) & 2535 R. N.—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.  
 H. C.—2540.

**Class 333.**—*Wensleydale Yearling Ewes, shown in Wool.* [9 entries.]

- 2549 I. (£10.)—JOHN A. WILLIS, Manor House, Carperby, Yorks.  
 2542 II. (£5.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.  
 2545 III. (£3.)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk, Yorks.  
 2544 R. N.—F. CALVERT BUTLER, Greenlands Farm, near Carnforth.  
 H. C.—2548.

**Class 334.**—*Wensleydale Shearling Rams.<sup>‡</sup>* [6 entries.]

- 2554 I. (£10.)—JOHN S. THOMPSON, Snotterton Hall, Winston, Darlington, for Snotterton Goolkeeper.  
 2550 II. (£5.)—F. E. GIBSON, Hestholm, Leyburn, Yorks, for Darlington.  
 2551 III. (£3.)—A. G. RAMSHAY, East Appleton, Catterick.  
 2553 R. N.—T. W. STEPHENSON, Denton Grange, W. Heighington, Co. Durham, for Hoggarth's Defeated 2nd.

**Class 335.**—*Three Wensleydale Shearling Ewes.<sup>‡</sup>* [5 entries.]

- 2559 I. (£10.)—WILLIAM DINSDALE, Low Bolton, Redmire, Yorks.  
 2557 II. (£5.) & 2558 R. N.—T. E. CLARE, Challan Hall, Silverdale, Lancs.  
 2556 III. (£3.) T. W. BARNBRIDGE, Gaylesfield Farm, Richmond, Yorks.

**Lonks.<sup>4</sup>**

**Class 336.**—*Lonk Rams, Shearling and upwards.* [2 entries.]

- 2562 I. (£10.)—EDWARD SMITH, Summerhouse Farm, Cowling, Crosshills, Keighley, for Summerhouse Stamp 2nd.  
 2561 R. N.—JAMES HARDISTY & WILLIAM BENSON, 141 Mann Street, Addingham Hkley, Yorkshire, for Ling Bob.

**Class 337.**—*Lonk Ram Lambs.* [3 entries.]

- 2564 I. (£10.) & 2563 II. (£5.)—EDWARD SMITH, Summerhouse Farm, Cowling, Crosshills, Keighley.  
 2565 R. N.—SIR JOHN O. S. THURSBY, BART., Ormerod House, Burnley.

<sup>1</sup> £25 towards these Prizes were given by the Wensleydale Longwool Sheep Breeders' Association.

<sup>2</sup> Champion Prize of £10 given by the Wensleydale Longwool Sheep Breeders' Association for the best Exhibit in Classes 329 to 335.

<sup>3</sup> Prizes given by the Darlington Local Committee. Open only to animals from flocks of not more than 20 ewes.

<sup>4</sup> £10 towards these Prizes were given by the Lonk Sheep Breeders' Association.

## Award of Live Stock Prizes at Darlington, 1920. cxi

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 338.—Three Lonk Shearling Ewes.** [1 entry.]

2566 I. (£10.) SIR JOHN O. S. THURSBY, BART., Ormerod House, Burnley, Lancs.

### Derbyshire Gritstones.

**Class 339.—Derbyshire Gritstone Rams, Shearling and upwards.**

[1 entry.]

2567 I. (£10.)—SIR JOHN O. S. THURSBY, BART., Ormerod House, Burnley, Lancs., for Harewood.

**Class 340.—Three Derbyshire Gritstone Shearling Ewes.** [No entry.]

### Kent or Romney Marsh.<sup>1</sup>

**Class 341.—Kent or Romney Marsh Two-Shear Rams.** [8 entries.]

2573 I. (£10. & Champion<sup>2</sup>), 2574 II. (£5), & 2575 III. (£3.)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

2572 R. N.—OSMOND C. MILLEN, Adisham Court, Canterbury, for Combe Bank No. 15 of 1918.  
C.—2571.

**Class 342.—Kent or Romney Marsh Shearling Rams.** [36 entries.]

2569 I. (£15. & R. N. for Champion<sup>2</sup>), & 2568 V. (£3.)—C. F. WOOD, Teynham Court, Sittingbourne, Kent.

2583 II. (£10.)—GEORGE FOSTER CLARE, Boughton Mount, Boughton Monchelsea, Maidstone.

2582 III. (£5), & 2601 IV. (£3.)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

2597 R. N.—OSMOND C. MILLEN, Adisham Court, Canterbury.  
C.—2588.

**Class 343.—Five Kent or Romney Marsh Shearling Rams.** [11 entries.]

2620 I. (£20.)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

2618 II. (£15.)—OSMOND C. MILLEN, Adisham Court, Canterbury.

2622 III. (£10.)—WALTER F. WOOD, Cuckoo Court, Sittingbourne, Kent.

2615 IV. (£5.)—L. H. & G. W. FINN, Westwood Court, Faversham.

2617 R. N.—THE HADLOW FLOCK COMPANY, Somerhill Estate Office, Tonbridge.  
C.—2621.

**Class 344.—Three Kent or Romney Marsh Ram Lambs.** [9 entries.]

2627 I. (£10.)—THE HADLOW FLOCK COMPANY, Somerhill Estate Office, Tonbridge.

2630 II. (£5), & 2628 III. (£3.)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

H. C.—2626. C.—2623.

**Class 345.—Three Kent or Romney Marsh Shearling Ewes.** [10 entries.]

2640 I. (£10. & Champion<sup>3</sup>)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

2634 II. (£5), & 2635 R. N.—L. H. & G. W. FINN, Westwood Court, Faversham.

2632 III. (£3.)—LIEUT.-COL. MATTHEW G. E. BELL, Bourne Park, Canterbury, for

Combe Bank 11. 4 & 24.

C.—2637.

**Class 346.—Three Kent or Romney Marsh Ewe Lambs.** [10 entries.]

2647 I. (£10), & R. N. for Champion<sup>3</sup>—OSMOND C. MILLEN, Adisham Court, Canterbury.

2550 II. (£5), & 2649 III. (£3.)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

H. C.—2645. C.—2651.

### Cotswolds.<sup>4</sup>

**Class 347.—Cotswold Shearling Rams.** [8 entries.]

2658 I. (£10), & 2659 R. N.—FREDERICK NEWMAN, Cold Aston, Bourton-on-the-Water.

2657 II. (£5), & 2656 III. (£3.)—WILLIAM GARNN, Abington, Fairford, Glos.

H. C.—2653, 2655. C.—2652.

<sup>1</sup> £53 towards these Prizes were given by the Kent or Romney Marsh Sheep Breeders' Association.

<sup>2</sup> Champion Prize of £10 10s. given by the Kent or Romney Marsh Sheep Breeders' Association for the best Ram in Classes 341 and 342.

<sup>3</sup> Champion Prize of £10 10s. given by the Kent or Romney Marsh Sheep Breeders' Association for the best Pen of Ewes or Ewe Lambs in Classes 345 and 346.

<sup>4</sup> £13 towards these Prizes were given by the Cotswold Sheep Society.



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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### **Class 348.—Three Cotswold Ram Lambs.** [4 entries.]

2662 I. (£10), & 2663 III. (£3).—WILLIAM GARNE, Abington, Fairford, Glos.  
2661 II. (£5.) & 2660 R. N.—COL. EDWIN P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

### **Class 349.—Three Cotswold Shearling Ewes.** [4 entries.]

2667 I. £10, & 2668 II. (£5).—WILLIAM GARNE, Abington, Fairford, Glos.

### **Class 350.—Three Cotswold Ewe Lambs.** [3 entries.]

2669 I. (£10), & 2670 II. (£5).—WILLIAM GARNE, Abington, Fairford, Glos.  
2668 III. (£3).—COL. EDWIN P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

## **Devon Long-Wools.<sup>1</sup>**

### **Class 351.—Devon Long-Wool Shearling Rams.** [2 entries.]

2671 I. (£10), & 2672 II. (£5).—FREDERICK WHITE, Torweston, Williton, Somerset.

### **Class 352.—Three Devon Long-Wool Ram Lambs.** [1 entry.]

2673 I. (£10).—FREDERICK WHITE, Torweston, Williton, Somerset.

### **Class 353.—Three Devon Long-Wool Shearling Ewes.** [2 entries.]

2675 I. (£10), & 2674 II. (£5).—FREDERICK WHITE, Torweston, Williton, Somerset.

## **South Devons.<sup>2</sup>**

### **Class 354.—South Devon Two-Shear Rams.** [2 entries.]

2676 I. (£10), & 2677 II. (£5).—JOHN STOOKE, Sherford, Brixton, Plymouth.

### **Class 355.—South Devon Shearling Rams.** [3 entries.]

2680 I. (£10).—JOHN STOOKE, Sherford, Brixton, Plymouth.  
2678 II. (£5).—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.

### **Class 356.—Three South Devon Ram Lambs.** [2 entries.]

2681 I. (£10).—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.  
2682 II. (£5).—JOHN STOOKE, Sherford, Brixton, Plymouth.

### **Class 357.—Three South Devon Shearling Ewes.** [1 entry.]

2683 I. (£10).—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.

### **Class 358.—Three South Devon Ewe Lambs.** [3 entries.]

2684 I. (£10).—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.  
2685 II. (£5).—JOHN STOOKE, Sherford, Brixton, Plymouth.

## **Dartmoors.<sup>3</sup>**

### **Class 359.—Dartmoor Rams, Two-Shear and upwards.** [3 entries.]

2689 I. (£10).—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon, for ram born 1917, bred by John Dawe, Week Farm, Tavistock  
2688 II. (£5).—W. A. JOHNS & SONS, Cleave, Kelly, Lifton, Devon, for ram born 1918.

### **Class 360.—Dartmoor Shearling Rams.** [3 entries.]

2691 I. (£10).—W. A. JOHNS & SONS, Cleave, Kelly, Lifton, Devon.  
2692 II. (£5).—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon.

### **Class 361.—Three Dartmoor Shearling Ewes.** [4 entries.]

2696 I. (£10).—H. NORTHBY, Lake, Lifton, Devon.  
2695 II. (£5), & 2694 R. N.—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon.

## **Cheviots.<sup>4</sup>**

### **Class 362.—Cheviot Rams, Two-Shear and upwards.** [3 entries.]

2699 I. (£10, & Champion<sup>5</sup>), & 2693 III. (£3).—ROBSON & DODD, Newton, Bellingham, for Yearlie Whin.  
2697 II. (£5).—JOHN ROBSON, Newton, Bellingham, Northumberland.

<sup>1</sup> £15 towards these Prizes were given by the Devon Long-Woolled Sheep Breeders' Society.

<sup>2</sup> £30 towards these Prizes were given by the South Devon Flock Book Association.

<sup>3</sup> £15 towards these Prizes were given by the Dartmoor Sheep Breeders' Association.

<sup>4</sup> £20 towards these Prizes were given by Breeders of Cheviot Sheep.

<sup>5</sup> The "Borthwick" Challenge Cup given by the Cheviot Sheep Society for the best Cheviot Ram or Ewe in Classes 362-365.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 363.—*Cheviot Shearling Rams*. [3 entries.]

- 2702 I. (£10, & R. N. for Champion<sup>1</sup>), & 2701 II. (£5).—JOHN ROBSON, Newton, Bellingham.

2700 III. (£3).—JOHN ROBSON, Lynegar, Watten, Caithness.

### Class 364.—*Cheviot Ewes, Two-Shear and upwards, with their Lamb at four*. [3 entries.]

- 2703 I. (£10).—JOHN ROBSON, Lynegar, Watten, Caithness.

2705 II. (£5), & 2704 III. (£3).—JOHN ROBSON, Newton, Bellingham, for ewe born 1918.

### • Class 365.—*Cheviot Shearling Ewes*. [3 entries.]

- 2703 I. (£10), & 2707 III. (£3).—JOHN ROBSON, Newton, Bellingham, Northumberland.

2706 II. (£5).—JOHN ROBSON, Lynegar, Watten, Caithness.

## Herdwicks.<sup>2</sup>

### Class 366.—*Herdwick Rams, Two-Shear and upwards*. [4 entries.]

- 2710 I. (£10).—J. J. SHEPHERD, Hobe House, Dent, Yorks.

2709 II. (£5).—LORD LECONFIELD, Cockermouth Castle, Cumberland, for Dash Jerry.

2712 R. N.—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for Wastwater.

### Class 367.—*Herdwick Shearling Rams*. [3 entries.]

- 2715 I. (£10), & 2714 R. N.—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for Rounton Royal.

2713 II. (£5).—J. J. SHEPHERD, Hole House, Dent, Yorks.

### Class 368.—*Three Herdwick Shearling Ewes*. [2 entries.]

- 2717 I. (£10).—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for ewes bred by the Earl of Lonsdale, Whitehaven Castle.

## Welsh Mountain.<sup>3</sup>

### Class 369.—*Welsh Mountain Rams, Two-Shear and upwards*. [5 entries.]

- 2718 I. (£10).—THE HON. E. L. MOSTYN, The Wern Farm, Whitford, Holywell, N. Wales, for Wern Hopeful.

2719 II. (£5).—MAJOR ERIC J. W. PLATT, Gorddingog, Llanfairfechan, N. Wales, for Madryn Klondyke.

2721 R. N.—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor, for Snowdon K 2.  
H. C.—2720.

### Class 370.—*Welsh Mountain Shearling Rams*. [6 entries.]

- 2724 I. (£10).—MAJOR ERIC J. W. PLATT, Gorddingog, Llanfairfechan, N. Wales, for Madryn Lliewelyn.

2726 II. (£5), & 2727 R. N.—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor, for Snowdon L 15.  
H. C.—2725.

### Class 371.—*Three Welsh Mountain Shearling Ewes*. [5 entries.]

- 2732 I. (£10), & 2731 R. N.—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor.

2729 II. (£5).—R. M. GRAVES, Wern, Portmadoc.  
H. C.—2730.

## Black-faced Mountain.<sup>4</sup>

### Class 372.—*Black-faced Mountain Rams, Two-Shear and upwards*. [5 entries.]

- 2735 I. (£10).—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, co. Durham, for Brown Spot.

2738 II. (£5).—JOHN ROBSON, Newton, Bellingham, Northumberland.

2737 III. (£3), & 2736 R. N.—MESSRS. MUNAT, Tarset Hall, Bellingham, Northumberland, for Little Jim.

<sup>1</sup> The "Borthwick" Challenge Cup given by the Cheviot Sheep Society for the best Cheviot Ram or Ewe in Classes 362-365.

<sup>2</sup> £15 towards these Prizes were given by the Herdwick Sheep Breeders' Association.

<sup>3</sup> £10 towards these Prizes were given by the Welsh Mountain Sheep Flock Book Society.

<sup>4</sup> £20 towards these Prizes were given by the English Blackface Sheep Society.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 373.**—*Black-faced Mountain Shearling Rams.* [6 entries.]

2742 I. (£10).—MESSES. MUNAY, Tarslet Hall, Bellingham, Northumberland, for High Craghton Hero.

2743 II. (£5).—GEOFFREY ROBSON, Closehill, Bellingham.

2740 III. (£3), & 2739 E. N.—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co. Durham. H.O.—2741.

**Class 374.**—*Black-faced Mountain Ewes, Two-Shear and upwards. (With their lamb at foot.)* [4 entries.]

2748 I. (£10).—JOHN ROBSON, Newton, Bellingham, for ewe born 1917.

2746 II. (£5), & 2745 III. (£3).—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co. Durham.

**Class 375.**—*Black-faced Mountain Shearling Ewes.* [4 entries.]

2749 I. (£10), & 2750 III. (£3).—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co. Durham.

2752 II. (£5).—JOHN ROBSON, Newton, Bellingham.

2751 E. N.—GEOFFREY ROBSON, Closehill, Bellingham.

## Black-faced Dales Bred.<sup>1</sup>

*To be shown unshorn.*

**Class 376.**—*Black-faced Dales Bred Rams, born previous to 1918.* [3 entries.]

2755 I. (£10).—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale, Richmond, Yorks.

2754 II. (£5).—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.

2753 III. (£3).—JOSEPH W. M. DENT, Fair View, Middleton-in-Teesdale.

**Class 377.**—*Black-faced Dales Bred Rams, born in 1918.* [6 entries.]

2756 I. (£10).—THOMAS ADDISON, Bowes, Darlington.

2761 II. (£5).—JOSEPH RAINE, Brow Farm, Dufton, Appleby, Westmoreland.

2758 III. (£3).—T. GILBERT DUGDALE, Gilmonby Hall, Bowes, Darlington.

2760 E. N.—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale.

**Class 378.**—*Black-faced Dales Bred Ram Hogs, born in 1919.* [8 entries.]

2763 I. (£10).—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale, Richmond, Yorks.

2767 II. (£5).—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.

2768 III. (£3).—JOSEPH RAINE, Brow Farm, Dufton, Appleby, Westmoreland.

2762 E. N.—GEORGE W. M. BAINBRIDGE, Bink House, Kelton, Middleton-in-Teesdale.

**Class 379.**—*Three Black-faced Dales Bred Gimmer Hogs, born in 1919.*

[2 entries.]

2771 I. (£10).—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.

2770 II. (£5).—JOSEPH WILLIAM DENT, Fair View, Middleton-in-Teesdale.

## PIGS.

### Large Whites.

**Class 380.**—*Large White Boars, farrowed in or before 1918.* [13 entries.]

2777 I. (£10, Champion,<sup>2</sup> & Champion<sup>3</sup>).—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for Worsley Jay 35th 20419, born Jan. 26, 1915; s. Jay of Worsley 12th 16143, d. Worsley Lady 10th 39620 by Worsley Emperor 36th 15479.

2776 II. (£5, & R. N. for Champion<sup>2</sup>).—SIR GILBERT GREENALL, BT., C.V.O., for Bourne Bulwark 2nd 20621, born Jan. 13, 1916, bred by Edmund Wherry, Bourne, Lincs.; s. Worsley Turk 66th 19281, d. Bourne Bramble 48th 37728 by Bourne Banner 6th 15947.

2772 III. (£3).—CHIVERS & SONS LTD., Histon, Cambridge, for Histon Thor 22461, born March 2, 1917; s. Spalding Vulcan 17703, d. Histon Princess 2nd 44442 by Borrowfield Conqueror 17047.

<sup>1</sup> Prizes given by the Darlington Local Committee.

<sup>2</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Boar in Classes 380-383.

<sup>3</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Large White Pig in Classes 380-386.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

2782 IV. (£2.)—EDMUND WHERRY, Bourne, Lincs., for Bourne Bar None 20347, born Jan. 14, 1916; s. Worsley Turk 66th 15261, d. Buttercup of Bourne 46758 by Eclipse of Altrincham 18543.

2783 R. N.—ALFRED W. WHITE, Hillegom, Spalding, for Banner of Spalding, H. C.—2775. C.—2784.

Class 381.—*Large White Boars, farrowed in 1919, before July 1.*  
[6 entries.]

2786 I. (£10.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for Worsley Jay 83rd 27631, born Jan. 16; s. Worsley Jay 35th 20419, d. Queen of Worsley 11th 50330 by Turk of Rayton 16393.

2790 II. (£5.)—EDMUND WHERRY, Bourne, Lincs., for Bourne Big Ben 9th 26307, born Jan. 4; s. Bourne Big Ben 22107, d. Bourne Buttercup 2nd 43814 by Bourne Banger 2nd 17111.

2787 III. (£3.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for Banner of Caldmore 25879, born Jan. 7, bred by A. W. White, Hillegom, Spalding; s. Banner of Spalding 21987, d. Perfection of Spalding 30290 by Jay of Wyboston 16149.

2789 R. N.—F. SMITH, Helsby Creamery, near Warrington, for Spalding Wonder 7th.  
Class 382.—*Large White Boars, farrowed in 1919, on or after July 1.*  
[14 entries.]

2803 I. (£10.)—EDMUND WHERRY, Bourne, Lincs., for Bourne Big Ben 26th, born July 3; s. Bourne Big Ben 22107, d. Bourne Empress 17th 58198 by Emperor of Pinchbeck 21077.

2800 II. (£5.)—F. P. & F. J. PITCHER, Mangapp Manor, Burnham-on-Crouch, Essex, for Spalding Banner 3rd (Vol. 37), born July 18, bred by A. W. White, Hillegom, Spalding; s. Banner of Spalding 21987, d. Spalding Queen Mary 3rd 50604.

2804 III. (£3.)—ALFRED W. WHITE, Hillegom, Spalding, Lincs., for Spalding Banner 4th, born July 18; s. Banner of Spalding 21987, d. Spalding Queen Mary 3rd 50604 by Turk of Rayton 16393.

2801 IV. (£2.)—F. SMITH, Helsby Creamery, Warrington, for Fenton Turk 28443, born July 1, bred by A. Deighton, Church Fenton, Yorks; s. Worsley Turk 105th 24993, d. Kitchen Maid 49894 by Kitchener 20083.

2782 R. N.—ARTHUR B. EDWARDS, Brewery House, Harlow, for Bottesford Jay 25th.  
H. C.—2797. C.—2802.

Class 383.—*Large White Boars, farrowed in 1920.* [28 entries.]

2806 I. (£10.)—DANIEL R. DAYBELL, Bottesford, Nottingham, for boar, born Jan. 2; s. Bourne Bulwark 2nd 20921, d. Margold of Bottesford 34458 by Turk of Belton 21411.

2816 II. (£5.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for Walton Boy 4th, born Jan. 2; s. Sapperton Boy 24471, d. Belle of Walton 1st 42661 by Turk of Worsley 10th 17775.

2820 III. (£3.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for boar, born Jan. 1; s. Lion Heart of Caldmore 26927, d. Amelia of Caldmore 36th by Kitchener of Caldmore 32533.

2811 IV. (£2.)—THE EARL OF ELLESMERE, Worsley Hall, nr. Manchester, for boar, born Jan. 1; s. Stetchworth Jay 2nd 21341, d. Queen of Stetchworth 50322, by Turk of Histon 20289.

2829 R. N.—EDMUND WHERRY, Bourne, Lincs., for Bourne Bar-None 102nd.  
H. C.—2831. C.—2812, 2818, 2827, 2832.

Class 384.—*Large White Breeding Sows, farrowed in or before 1918.*  
[19 entries.]

2848 I. (£10, Champion,\* & R. N. for Champion,\*)—EDMUND WHERRY, Bourne, Lincs., for Bourne Queen Anne 52772, born Jan. 7, 1918, farrowed Jan. 23; s. Emperor of Pinchbeck 21077, d. Queen Anne of Pinchbeck 47548 by That 'Im of Worsley 1st 19095.

2834 II. (£5.)—CHIVERS & SONS, LTD., Histon, Cambridge, for Histon Bertha 2nd 53823, born Sept. 2, 1917, farrowed Jan. 4; s. Spalding Vulcan 17703, d. Histon Beryl 4th 44418 by Western Volunteer 17653.

2839 III. (£3.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for Queen of Worsley 11th 50630, born July 20, 1919, farrowed Jan. 9, bred by Alfred W. White, Hillegom, Spalding, Lincs.; s. Turk of Rayton 16393, d. Queen Mary 41888 by Stanwardine Jay 16345.

2843 IV. (£2.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for Caldmore Miss Hollingsworth 49204, born Jan. 2, 1915, farrowed Jan. 18; s. Bridgroom of Bourne 15091, d. Miss Hollingsworth 41740 by Mellington Jay of Bottesford 10965.

2835 R. N.—ARTHUR B. EDWARDS, Brewery House, Harlow, for Wyboston Amy 11th.  
H. C.—2846. C.—2833.

\* Prizes given by the National Pig Breeders' Association.

\* Silver Challenge Cup, value Twenty-five Guinea, given by the National Pig Breeders' Association for the best Large White Pig in Classes 380-383.

\* Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Sow in Classes 384-386.

cxvi *Award of Live Stock Prizes at Durlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

**Class 385.—Large White Sows, farrowed in 1919, before July 1.**

[10 entries.]

- 2859 I. (£10, & R.N. for Champion<sup>1</sup>).—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for *Perfection of Caldmore*, born Jan. 7, bred by A. W. White, Hillegom, Spalding, Lincs.; s. *Banner of Spalding* 21887, d. *Perfection of Spalding* 50290 by Jay of Botesford 16149.  
2861 II. (£5).—EDMUND WHERRY, Bourne, Lincs., for *Bourne Beauty* 56126, born Jan. 2; s. *Bourne Big Ben* 22107, d. *Bouquet of Bourne* 37698 by *Pode Hole Felipe* 16263.  
2867 III. (£8).—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for *Worsley Queen* 160th, born Jan. 21; s. *Jay of Worsley* 14th 16147, d. *Worsley Queen* 64th 48648 by *Worsley Emperor* 8th 19241.  
2858 R. N.—SIR GILBERT GREENALL, BT., C.V.O., for *Worsley Fairy* 17th.  
H. C.—2855. C.—2853.

**Class 386.—Large White Sows, farrowed in 1919, on or after July 1.**

[15 entries.]

- 2871 I. (£10).—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for *Empress of Walton* 9th, born July 2, bred by R. Bourne, Dowse Green; s. *Worsley Banner* 3rd 24883, d. *Cholmondeley Empress* 52960 by *Hercules of Cholmondeley* 21123.  
2870 II. (£5).—SIR GILBERT GREENALL, BT., C.V.O., for *Empress of Walton* 6th, born July 1, bred by R. Bourne, Dowse Green, Cholmondeley, Malpas; s. *Worsley Banner* 3rd 24883, d. *Bottesford Empress* 21st 46820 by *Ringleader of Bottesford* 2nd 18623.  
2875 III. (£3).—EDMUND WHERRY, Bourne, Lincs., for *Bourne Bouquet* 15th, born July 30; s. *Bourne Bandmaster* 50th 22071, d. *Bourne Bouquet* 9th 52702 by *Bourne Bar-None* 20847.  
2869 R. N.—JOHN FILLINGHAM, The George Hotel, Grantham, for *Grantham Stormer*.  
H. C.—2867. C.—2864, 2865.

**Class 387.—Three Large White Sows, farrowed in 1920. [10 entries.]**

- 2879 I. (£10).—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for *Walton Belles*, born Jan. 2; s. *Sapperton Boy* 24711, d. *Bells of Walton* 1st 46264 by *Turk of Worsley* 10th 17775.  
2877 II. (£5).—DANIEL R. DAYELL, Bottesford, Nottingham, for sows, born Jan. 6; s. *Worsley Jay* 5th 27619, d. *Bottesford Buttercup* 16th 52826 by *Worsley Turk* 9th 22971.  
2884 III. (£3).—E. TOMLINSON, East House Farm, Tockwith, Yorks., for sows, born Jan. 3; s. *Hercules of Walton* 4th 23985, d. *Lady of Tockwith* 54172 by *Spalding Turk* 8th 21317 and *Fragrance of West Derby* 46944 by *Turk of Worsley* 10th 17775.  
2885 R. N.—EDMUND WHERRY, Bourne, Lincs.  
H. C.—2886. C.—2881.

**Middle Whites.**

**Class 388.—Middle White Boars, farrowed in or before 1918.**

[8 entries.]

- 2888 I. (£10, Champion<sup>2</sup>, & R. N. for Champion<sup>3</sup>).—JOHN CHIVERS, Wychfield, Cambridge, for *Histon Shrewsbury* 2nd 28081, born Feb. 5, 1918; s. *Shrewsbury* 19511, d. *Welcome Histon* 61900, by *Sundon Scott* 20669.  
2882 II. (£5).—LEOPOLD C. PAGET, Middlethorpe Hall, York, for *Dividend of Wharfedale* 20511, born Jan. 7, 1915, bred by the Earl of Sefton, Croxeth Hall, Liverpool; s. *Croxeth Banker* 2nd 16733, d. *Tarbock Pattie* 13th 22064 by *Walton Turret* 12th 9433.  
2893 III. (£3).—LEOPOLD C. PAGET, for *Wharfedale Marvel* 25653, born Jan. 6, 1918; s. *Wharfedale Corporal* 19539, d. *Mascot of Wharfedale* 46500 by *Cow Boy* 20489.  
2891 R. N.—IVOR L. JAMES, Beechcroft, Stafford, for *Prestwood Acrobat* 1st.  
H. C.—2894.

**Class 389.—Middle White Boars, farrowed in 1919, before July 1.<sup>4</sup>**

[7 entries.]

- 2895 I. (£10).—JOHN CHIVERS, Wychfield, Cambridge, for *Histon Woodman* 28099, born Jan. 3; s. *Sundon Shrewsbury* 23243, d. *Lady Woodlands* 56890 by *Sundon Scott* 20669.

<sup>1</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Sow in Classes 384-386.

<sup>2</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Boar in Classes 388-391.

<sup>3</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Middle White Pig in Classes 388-394.

<sup>4</sup> Prizes given by the National Pig Breeders' Association.

## Award of Live Stock Prizes at Darlington, 1920. cxvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 2398 II. (£5.)—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton, for boar, born Jan. 1; s. Prestwood Acrobat 1st 23197, d. Prestwood Rosadora 1st 43806 by Prestwood Engler 14661.  
 2400 III. (£2.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for Wharfedale Jellico 28343, born Jan. 23; s. Preserver of Wharfedale 28493, d. Wharfedale Revella 8th 45004 by Wharfedale Corporal 18539.  
 2399 E. N.—W. L. HOLIDAY, Slottford Head, Cornhill-on-Tweed, for Wharfedale Royal. H. C.—2897.

**Class 390.—Middle White Boars, farrowed in 1919, on or after July 1.**  
 [3 entries.]

- 2393 I. (£10.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for boar, born Aug. 21; s. Wharfedale Ubique 2nd 28363, d. Wharfedale Ainsie 43802 by Wharfedale Corporal 18539.  
 2402 II. (£5.)—L. HARRISON & CO., LTD., Coolham, Shipley, Sussex, for Shipley David, born Aug. 3; s. Prestwood David 8th 28233 d. Prestwood Rosadora 7th 57180 by Prestwood Acrobat 1st 23197.

**Class 391.—Middle White Boars, farrowed in 1920.** [14 entries.]

- 2314 I. (£10, & R.N. for Champion.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, born Jan. 6; s. Wharfedale Jumper 28343, d. Harthay Perfection of Arcadia by Shrewsbury 19511.  
 2312 II. (£5.)—LEOPOLD C. PAGET, for boar, born Jan. 3; s. Wharfedale Lifeboat 28351, d. Wharfedale Surely 57462 by Croxteth Banker 4th 23553.  
 2306 III. (£3.)—S. F. EDGE, Gallops, Homestead, Ditching, Sussex, for Albany King Shrewsbury, born Jan. 3; s. Shrewsbury of Albany 21777, d. Albany Fuchsia 51234 by Bookham Venture 21637.  
 2316 IV. (£2.)—DR. M. J. ROWLANDS, Nush Farm, Keston, Kent, for Keston George Frederick, born Jan. 4; s. Albany Shrewsbury 25129, d. Mabel of Keston 62342 by Hadleigh Phoenix 20617.  
 2308 E. N.—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton. H. C.—2911, 2917, 2918.

**Class 392.—Middle White Breeding Sows, farrowed in or before 1918.**  
 [10 entries.]

- 2321 I. (£10, Champion\*, & Champion.)—JOHN CHIVERS, Wychfield, Cambridge, for Histon Pianissimo 51542, born Jan. 13, 1916, farrowed Feb. 4; s. Shrewsbury 19511, d. Perfection's Pride 40036 by Hollywell Jonathan 14435.  
 2325 II. (£5.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for Midlothian Robina 51868, born Jan. 6, 1917, farrowed March 21, bred by the Earl of Roebury, E.G. K.T. Dalmeny, Edinburgh; s. Cow Boy 20469, d. Midlothian Rose 43058 by Actor of Hatfield 16693.  
 2322 III. (£3.)—JOHN CHIVERS, for Pendley Joyce 51756, born April 20, 1917, farrowed Feb. 1, bred by J. G. Williams, Pendley Manor, Tring, Herts.; s. Castlecroft Jonathan 20469, d. Wharfedale Joyce 43272 by Earl of Wharfedale 18748.  
 2319 E. N.—H. R. BEETON, Hammonds, Checkendon, Reading, for Histon Pride 4th. H. C.—2920, 2923, 2927.

**Class 393.—Middle White Sows, farrowed in 1919, before July 1.** [12 entries.]

- 2334 I. (£10, & R.N. for Champion.)—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton, for sow, born Jan. 16; s. Prestwood Acrobat 23197, d. Prestwood Alberta 3rd 57122 by Prestwood Jonathan 1st 20569.  
 2331 II. (£5.)—JOHN CHIVERS, Wychfield, Cambridge, for Histon Prudence 2nd, born Feb. 1; s. Bookham of Harthay 19368, d. Histon Prudence 63102, by Durbar of Histon 21679.  
 2333 III. (£3.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for Wharfedale Twinkle 63840, born Jan. 3; s. Wharfedale Resistance 26657, d. Wharfedale Sparkling 51976 by Dividend of Wharfedale 26511.  
 2329 E. N.—H. R. BEETON, Hammonds, Checkendon, Reading, for Watford Grace. H. C.—2935, 2939, 2940. C.—2937.

**Class 394.—Middle White Sows, farrowed in 1919, on or after July 1.**  
 [4 entries.]

- 2341 I. (£10.)—JOHN CHIVERS, Wychfield, Cambridge, for Histon Choice 12th, born July 2; s. Histon Wanderer 23349, d. Rose of Croxteth 40076 by Blythe Reveller 15675.  
 2342 II. (£5.)—JOHN CHIVERS, for Histon Choice 18th, born July 2; s. Histon Wanderer 23349, d. Rose of Croxteth 40076 by Blythe Reveller 15675.

\* Prizes given by the National Pig Breeders' Association.

<sup>1</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Boar in Classes 338-351.

<sup>2</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Middle White Pig in Classes 338-324.

<sup>3</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Sow in Classes 352-394.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 2943 III. (£3.).—L. HARRISON & Co. LTD., Coolham, Shipley, Sussex, for Shipley Alberta, born Aug. 8; s. Prestwood David 6th 28233, d. Prestwood Alberta 6th 57128 by Don of West Derby 26513.
- 2944 R. N.—LEOPOLD C. PAGE, Middlethorpe Hall, York, for Arcadian Pride 1st.
- Class 395.—Three Middle White Sows, farrowed in 1920. [13 entries.]
- 2954 I. (£10.).—LEOPOLD C. PAGE, Middlethorpe Hall, York, for sows, born Jan. 6 and Jan. 7; s. Wharfedale Jumper 28345 and Preserver of Wharfedale 251.3, d. Harthay Perfection of Arcadia by Shrewsbury 19511 and Wharfedale Opal 57442 by Pendley Led 23181.
- 2956 II. (£5.).—DR. M. J. ROWLANDS, Nash Farm, Keston, Kent, for sows, born Jan. 13; s. Albany Shrewsbury 25129, d. Prestwood Prolific 57174 by Prestwood Acrobat 1st 23129.
- 2949 III. (£3.).—W. B. HILL, Vauxhall, The Scotland, Cannock Road, Wolverhampton, for sows born Jan. 7 and Jan. 18; s. Scotty of Prestwood 25531, d. Prestwood Alberta 57122 by Prestwood Jonathan 1st 20589, and Prestwood Annie 39270 by Prestwood Buxier 14451.
- 2948 R. N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for Albany Fuschia 15th, Albany Fuschia 18th, and Albany Fuschia 19th.
- H. C.—2950, 2953, 2957. C.—2945, 2951.

## Tamworths.

Class 396.—Tamworth Boars, farrowed in or before 1918. [4 entries.]

- 2958 I. (£10. & R. N. for Champion.)—ROBERT IBBOTSON, Knowle, Warwickshire for Basildon Max 25683, born March 24, 1918, bred by Major Morrison, D.S.O., Basildon Park, Reading; s. Brodsworth Able 23311, d. Knowle Lady Manners 2nd 33942 by Knowle General Joffre 20655.
- 2959 II. (£5.).—ROBERT IBBOTSON, for Knowle Cardiff 28415, born Sept. 20, 1918; s. Knowle Mountaineer 3rd 23333, d. Knowle Model 10th 52048 by Knowle Arundel 21855.
- 2961 III. (£3.).—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for Choice of Putley 23313, born March 15, 1917, bred by Robert Ibbotson, The Hawthorns, Knowle, Warwickshire; s. Kerr's Choice 18593, d. Queen Mary 43450 by Knowle Lottery 18241.
- 2960 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for Basildon Sam.

Class 397.—Tamworth Boars, farrowed in 1919.<sup>2</sup> [5 entries.]

- 2965 I. (£10. & Champion.)—B. I. PHILIP, Botts Green House, Whitacre, Birmingham, for Whitacre Surprise 28511, born Jan. 3; s. Enterprise of Whitacre 21841, d. Whitacre Ida 46116 by Kerr's Choice 19543.
- 2964 II. (£5.).—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for Basildon Alec, born Jan. 2; s. Brodsworth Able 23311, d. Knowle Arbury 3rd 45704 by Roxley Able 18257.
- 2962 III. (£3.).—ROBERT IBBOTSON, Knowle, Warwickshire, for Knowle Antony 2nd 28409, born March 10; s. Knowle Arundel 21855, d. Knowle Madeline 2nd 46010, by Sunstar 18269.
- 2966 R. N.—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for Putley Choice.

Class 398.—Tamworth Boars, farrowed in 1920. [5 entries.]

- 2968 I. (£10.).—ROBERT IBBOTSON, Knowle, Warwickshire, for boar, born Jan. 6; s. Basildon Max 25683, d. Knowle Model 10th 52048 by Knowle Arundel 21855.
- 2970 II. (£5.).—B. I. PHILIP, Botts Green House, Whitacre, Birmingham, for boar, born Jan. 14; s. Enterprise of Whitacre 21841, d. Whitacre Mirth 46118 by Lord Bobbie 18251.
- 2967 III. (£3.).—ROBERT IBBOTSON, for boar, born Jan. 6; s. Basildon Max 25683, d. Knowle Model 10th, 52048 by Knowle Arundel 21855.
- 2969 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.

Class 399.—Tamworth Breeding Sows, farrowed in or before 1918.

[5 entries.]

- 2962 I. (£10. & R. N. for Champion.\* & R. N. for Champion.)—ROBERT IBBOTSON, Knowle, Warwickshire, for Knowle Beatrice 10th 52034, born Aug. 22, 1917, farrowed Jan. 10; s. Knowle Asbdown 21857, d. Knowle Beatrice 43366 by Osmaston Buxus 14683.

<sup>1</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Boar in Classes 396-398.

<sup>2</sup> Prizes given by the National Pig Breeders' Association.

<sup>3</sup> Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Tamworth Pig in Classes 396-400.

<sup>4</sup> Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Sow in Classes 399 and 400.

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[Unless otherwise stated, each prize animal named below was "bred by exhibitor"]

- 2673 II. (£5.)—ROBERT IBBOTSON, for *Knowle Madeline* 15th, 48710, born Jan. 17, 1916, farrowed Jan. 3; s. *Knowle Macqueen* 3rd 18247, d. *Knowle Madeline* 4th 40268 by *Knowle Professor* 15793.  
 2674 III. (£3.)—ROBERT IBBOTSON, for *Knowle Model* 10th, born Aug. 12, 1917, farrowed Jan. 6; s. *Knowle Arundel* 21855, d. *Knowle Modula* 4th 48724 by *Knapp* 2/85.  
 2676 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for *Knowle Lady, Manners* 2nd, H.C.—22375.

Class 400.—*Tamworth Sows, farrowed in 1919. [6 entries.]*

- 2678 I. (£10, Champion,\* & Champion,?)—ROBERT IBBOTSON, *Knowle, Warwickshire, for Knowle Favourite* 83963, born March 10; s. *Knowle Arundel* 21855, d. *Knowle Madeline* 2nd 46010 by *Sunstar* 18262.  
 2677 II. (£5.)—ROBERT IBBOTSON, for *Knowle Fashion*, 63962, born March 10; s. *Knowle Arundel* 21855, d. *Knowle Madeline* 2nd 46010 by *Sunstar* 18262.  
 2660 III. (£3.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for *Basildon Lady Manners* 2nd 63886, born March 29; s. *Basildon Able* 26675, d. *Knowle Lady Manners* 2nd 52042 by *Brodsworth Able* 23311.  
 2661 R. N.—B. I. PHILLIP, *Botts Green House, Whitacre, Birmingham, for Whitacre Countess* 19th, H.C.—2976.

Class 401.—*Three Tamworth Sows, farrowed in 1920. [2 entries.]*

- 2693 I. (£10.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for sow, born Jan. 24, 1920; s. *Whitacre Fireway* 26821, d. *Basildon Golden Queen* 2nd 57506 by *Brodsworth Able* 23311.  
 2694 II. (£5.)—J. L. & A. RILEY, *Putley, Ledbury, Herefordshire, for Putley Floss* 5th, *Putley Floss* 6th, and *Putley Floss* 7th, born Feb. 11; s. *Putley Choice*, d. *Putley Floss* 4th 57636 by *Roxley Argyle* 21025.

### Berkshires.

Class 402.—*Berkshire Boars, farrowed in or before 1918. [6 entries.]*

- 2665 I. (£10, Champion,\* & R. N. for Champion,\*)—H. R. BRETTON, *Hammonds, Checkendon, Reading, for Garry On*, born Sept. 2, 1917, bred by J. H. Ismay, *Iwerne Minster, Blandford*; s. *Hurry On* 19836, d. *Iwerne Megan* 18937 by *Iwerne Lad* 2nd 18971.  
 2660 II. (£5.)—W. HOWARD PALMER, *Stokes Farm, Wokingham, Berks, for Murrell Prince* 20332, born June 29, 1917; s. *Minley King* 18364, d. *Murrell Primrose* 19580 by *Whitley Longfellow* 18690.  
 2697 III. (£3.)—JAMES ISMAY, *Iwerne Minster, Blandford, for Highclere Hero* 21401, born April 3, 1918, bred by the Earl of Carnarvon, *Highclere Park, Newbury*; s. *Iwerne Hare Hill* 19168, d. *Highclere Grace* 19902 by *Highclere Postmaster* 18444.  
 2688 R. N.—T. A. JACKSON, *Newick, Bainton, Driffield, for Newick Christopher*, H.C.—2982.

Class 403.—*Berkshire Boars, farrowed in 1919 before July 1.\**

[6 entries.]

- 2664 I. (£10, & R. N. for Champion,\*)—MRS. JERVOISE, *Herriard Park, Basingstoke, for Herriard Premier* 2nd 21864, born March 8; s. *Pygmalion* 18872, d. *Primula* 19019 by *Vermore Bill* 4th 18270.  
 2696 II. (£5.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for *Hurry Onward*, born Jan. 10, bred by James Ismay, *Iwerne Minster, Blandford*; s. *Hurry On* 19836, d. *Iwerne Miss Minster* 18975 by *Hugo* 17838.  
 2696 III. (£3.)—W. HOWARD PALMER, *Stokes Farm, Wokingham, Berks, for Murrell Ringleader* 21904, born April 6; s. *Minley King* 18364, d. *Minley Miriam* 18930 by *Minley Lad* 2nd 18171.  
 2693 R. N.—JAMES ISMAY, *Iwerne Minster, Blandford, for Iwerne Premier*, H.C.—2992.

Class 404.—*Berkshire Boars, farrowed in 1919, on or after July 1.*

[11 entries.]

- 3004 I. (£10,\*)—W. HOWARD PALMER, *Stokes Farm, Wokingham, Berks, for Motcombe Scott* 22256, born July 20, bred by Lord Stalbridge, *Motcombe House, Shaftesbury*; s. *Braishfield Buck* 19009, d. *Minley Norah* 18931 by *Minley Lad* 2nd 18171.

\* Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Tamworth Pig in Classes 399-400.

\* Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Sow in Classes 399 and 400.

\* Champion Prize of £10 given through the British Berkshire Society for the best Berkshire Boar in Classes 402-406.

\* Champion Prize of £10 10s. given by the British Berkshire Society for the best Berkshire Boar or Sow in Classes 402-408.

\* Prizes given by the British Berkshire Society.



cxx *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3005 II. (£5. 1).—LORD STALBRIDGE, Motcombe House, Shaftesbury, Dorset, for *Motcombe Buck* 22358, born July 20; s. Braishfield Buck 19909, d. Minley Norah 18931 by Minley Lad 2nd 18171.

3002 III. (£3. 1).—LADY LUGOARD, Little Parkhurst, Abinger Common, Dorking, for boar, born Aug. 4; s. Pilate 20500, d. Daglan Phyllis 20534 by Whitley Wiseman 19344.

3000 IV. (£2).—JAMES ISMAY, Iwerne Minster, Blandford, for Iwerne Rawlence 22114, born Sept. 6; s. Manor Pioneer 20004, d. Iwerne Freda 20750 by Hurry On 19335.

2999 R. N.—ARTHUR HISCOCK, Manor France Farm, Blandford, for *Sutton Superfina*, H. C.—3006. C.—3003.

**Class 405.—Berkshire Boars, farrowed in 1920. [17 entries.]**

3017 I. (£10.).—L. HARRISON & CO., LTD., Coolham, Shipley, Sussex, for boar, born Jan. 2; s. Revenge 22315, d. Beauty F. 20889 by Lord Kirkham 19983.

3010 II. (£5.).—A. H. BISHOP, Home Farm, Thorntonhall, by Glasgow, for *Thorntonhall Chutney*, born Jan. 2; s. Manor Guardian 21277, d. Charming 6th 21402 by Manor Pioneer 20004.

3011 III. (£3.).—JOSEPH CAHSON, Manor House, King's Sutton, Banbury, for boar, born Jan. 20; s. Whitley O.K. 20469, d. Basildon Jealousy 20116 by Minley King 19394.

3024 IV. (£2.).—LORD STALBRIDGE, Motcombe House, Shaftesbury, Dorset, for boar, born Jan. 8; s. Braishfield Buck 19909, d. Minley Norah 18931 by Minley Lad 2nd 18171.

3008 R. N.—H. R. BASTON, Hammonds, Checkendon, Reading, H. C.—3020, 3023.

**Class 406.—Berkshire Breeding Sows, farrowed in or before 1918.**

[14 entries.]

3034 I. (£10, Champion.\* & Champion.†)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for *Basildon Juvenal* 20717, born Aug. 24, 1917, farrowed Jan. 25; s. Goldicote Rob 20126, d. Murrell Juvenal 19618 by Rob Roy 3rd 17619.

3037 II. (£5.).—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks, for *Murrell Lassie* 19975, born May 20, 1917, farrowed Jan. 5; s. Minley King 18364, d. Murrell Lass 18835 by Minley Champion 17122.

3035 III. (£3.).—BERNARD OPPENHEIMER, Sefton Park, Stoke Poges, Bucks, for *Swinton Princess Daphne* 20164, born Feb. 14, 1917, farrowed April 3, bred by Capt. Clive Behrens, Swinton Grange, Malton, Yorks.; s. Swinton Peel's Prize 19751, d. Langton Daphne 19320 by Motcomb Cognac 16605.

3038 IV. (£2.).—W. HOWARD PALMER, for *Murrell Sunshine* 20438, born Jan. 11, 1918, farrowed Jan. 6; s. Minley King 18364, d. Minley Sunshine 18894 by Suidon Jack 17327.

3029 R. N.—THE EARL OF HAREWOOD, Harewood, Leeds, for *Manor Florence*, H. C.—3033.

**Class 407.—Berkshire Sows, farrowed in 1919, before July 1.**

[16 entries.]

3048 I. (£10. & R.N. for Champion.†)—MRS. JERVOISE, Herriard Park, Basingstoke, for *Herriard Primula* 2nd 21856, born March 8; s. Pygmalion 18572, d. Primula 19619 by Velmore Bill 4th 18270.

3047 II. (£5.).—JAMES ISMAY, Iwerne Minster, Blandford, Dorset, for *Iwerne Virtue* 22096, born April 1; s. Manor Pioneer 20004, d. Virtue 20107, by Moundsmere Warrior 17564.

3049 III. (£3.).—MRS. JERVOISE, for *Herriard Primula* 3rd 21856, born March 8; s. Pygmalion 18572, d. Primula 19619 by Velmore Bill 4th 18270.

3062 IV. (£2.).—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks, for *Murrell Marie* 21906, born April 6; s. Minley King 18364, d. Minley Miriam 18930 by Minley Lad 2nd 18171.

3050 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for *Basildon Princess* 3rd, H. C.—3043. C.—3051.

**Class 408.—Berkshire Sows, farrowed in 1919, on or after July 1.**

[14 entries.]

3061 I. (£10.).—JAMES ISMAY, Iwerne Minster, Blandford, Dorset, for *Iwerne Maid* 22115, born Sept. 1; s. Manor Pioneer 20004, d. Iwerne Freda 20750 by Hurry On 19335.

3055 II. (£5.).—CAPT. H. COLMORE, Antwick Manor, Wantage, Berks, for *Antwick Lady Patience*, born Aug.; s. Lord Kirkham 19988, d. Charney Noisette by Moundsmere Filbert 19084.

\* Prizes given by the British Berkshire Society.

† Champion Prize of £10 10s. given by the British Berkshire Society for the best Berkshire Boar or Sow in Classes 402-408.

‡ Champion Prize of £10 given through the British Berkshire Society for the best Berkshire Sow in Classes 406-408.

## Award of Live Stock Prizes at Darlington, 1920. cxxi

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 3065 III. (£8).—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for *Murrell* *Bride*, born July 14; s. Minley Cossack 20634, d. Murrell Betka 19973 by Murrell King 19579.  
 3066 IV. (£2).—W. HOWARD PALMER, for *Murrell Miramar*, born July 14; s. Minley King 18364, d. Murrell Miriam 18971 by Murrell King 19579.  
 3069 R. N.—L. HARRISON & CO., LTD, Coolham, Shipley, Sussex, for *Peel Freda*.  
 H. C.—3064. C.—3062.

### Class 409.—Three Berkshire Sows, farrowed in 1920. [7 entries.]

- 3069 I. (£10).—H. R. BEETON, Hammonds, Checkendon, Reading, for sows born Jan. 2—Jan. 3, bred by R. B. Vincent, Manor Farm, Waterston, Dorchester; s. Murrell Premier 21570, ds. Compton Maggie, Compton Madge.  
 3073 II. (£5).—JAMES ISMAY, Iwerne Minster, Blandford, Dorset, for sows born Jan. 2, bred by R. B. Vincent, Manor Farm, Waterston, Dorchester; s. Murrell Premier 21570, d. Compton Mildred 22272.  
 3071 III. (£3).—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for sows born Jan. 20; s. Whitely O.K. 20699, d. Basildon Jealousy 20116 by Minley King 18364.  
 3070 R. N.—A. H. BISHOP, Home Farm, Thorntonhall, Glasgow, for Thorntonhall *Doris*, Thorntonhall *Connie*, and Thorntonhall *Cherry*.  
 Cup.<sup>1</sup>—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks.  
 R. N. for Cup.<sup>1</sup>—JAMES H. ISMAY, Iwerne Minster, Blandford, Dorset.

## Large Blacks.

### Class 410.—Large Black Boars, farrowed in or before 1918. [9 entries.]

- 3077 I. (£10, & Champion.<sup>2</sup>)—HARRY E. BASTARD, Tinten Manor, St. Tudy, Cornwall, for Trevisquite Padstonian 7973, born Aug. 8, 1917, bred by Thomas Warne, Trevisquite, St. Mabyn, Cornwall; s. Boss of the Valley 3555, d. Trevisquite Content 8th 13470.  
 3079 II. (£5, & R. N. for Champion.<sup>3</sup>)—J. COOPER BLAND, Westwood, Colchester, Essex, for Bixley Westwood 10663, born June 8, 1918, bred by Stanley A. Stimpson, Bixley, Norwich; s. Swardeston That's Him 7347, d. Bixley Springtime 1st 28180 by Brent Handyman 5423.  
 3082 III. (£3).—F. A. PERKINS, Marlow, Leintwardine, Herefordshire, for Bassingbourn *Offley Sovereign* 7871, born Feb. 8, 1917, bred by Alfred Playle, Bassingbourn, Cambs. s. Royal Sovereign 4593, d. Drayton Ellenora by Docking Dandy Dick 5135.  
 3080 R. N.—G. HALL, Langley House, Lanchester, Co. Durham, for Docking Olando 10841, born Aug. 12, 1918, bred by H. Groom, Docking, Norfolk.

### Class 411.—Large Black Boars, farrowed in 1919.<sup>3</sup> [28 entries.]

- 3098 I. (£10).—TERAH F. HOOLEY, Dry Drayton, Cambridge, for Drayton Democrat 11613, born Jan. 20; s. Loughton Marvel 4487, d. Drayton Debutante 23294 by Bassingbourn Cliff 6337.  
 3097 II. (£5).—R. S. HICKS, Wilbraham Temple, Cambs., for Wilbraham Salary 10623, born Feb. 17; s. Bassingbourn Centaur 6261, d. Sudbourn Sadie 6th 17622 by Drayton Mars 5289.  
 3090 III. (£3).—H. A. BROWN, Grendon, Atherstone, Warwick, for Grendon None Better 11093, born April 12; s. Swardeston Nulli Secundus 2nd 7143, d. Swardeston Lorna Doone 18124 by Sudbourne Bixley 3565.  
 3110 IV. (£2).—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne Angus 13013, born April 12; s. Tartar Yellow 8553, d. Bentley Matilda 114th 16562 by Tey Pride 4235.  
 3085 V. (£2).—VISCOUNT ALLENDALE, Bywell Hall, Stockfield-on-Tyne, for Bywell *Arah* 12259, born Sept. 7; s. Vahan *Arah* 2nd 7679, d. Sudbourne Bywell 35578 by Drayton Mars 5289.  
 3091 R. N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for Vahan King Max 1st.

### Class 412.—Large Black Boars, farrowed in 1920. [64 entries.]

- 3117 I. (£10).—HARRY E. BASTARD, Tinten Manor, St. Tudy, Cornwall, for Tinten Major, born Jan. 1; s. Cornwall King John 8371, d. Tinten Black Bess 31st 17233 by Boss of the Valley 3555.  
 3175 II. (£5).—MRS. WATSON-KENNEDY, Wiveton Hall, Cley, Norfolk, for Wiveton Colonel 12497, born Jan. 7; s. Bassingbourn Newland Harold 7717, d. McFieather Kitty 14762 by Sudbourne Champion Lad 4475.

<sup>1</sup> The "Berkshire" Silver Challenge Cup, value £20, given by the British Berkshire Society for the most points awarded in a combination of entries in Classes 402-409 on the basis of:—Four points for a first prize, three points for a second prize, two points for a third prize, one point for a fourth prize, two points for a Championship, and one point for a Reserve for a Championship.

<sup>2</sup> Champion Prize of £10 given by the Large Black Pig Society for the best Large Black Boar in Classes 410-412.

<sup>3</sup> Prizes given by the Large Black Pig Society.

## ccxii Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3136 III. (£2.)—DR. A. R. KAY, The Manor House, Blakeney, Norfolk, for **Newland Hamlet** 11887, born Jan. 7; s. Basingbourn Newland Harold 2217, d. Newland Doreen 22406 by Basingbourn Morton Rex 1st 6553.

3125 IV. (£2.)—S. F. EDGE, Gallups Homestead, Ditchling, Sussex, for **Vahan Laird** 1st 1252, born Jan. 2; s. Vahan King Melva 9801, d. Drayton Bellona 14638 by Drayton Disappointment 4573.

3150 V. (£2.)—F. A. PERKINS, Leintwardine, Herefordshire, for **Offley Cranston**, born Jan. 2; s. Basingbourn Offley Sovereign 73 7, d. Primley Krishna 23860 by Cleave Dreadnought 2nd 5917.

3133 B. N.—TERAH F. HOOLEY, Dry Drayton, Cambridge.  
H. C.—3118, 3119, 3147, 3171, 3172. C.—3133, 3141, 3152, 3155, 3173.

### Class 413.—Large Black Breeding Sows, farrowed in or before 1918.

[22 entries.]

3186 I. (£10.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for **Tinton Black Bess** 22nd 26564, born May 15, 1918, farrowed Jan. 23, bred by H. Bastard, Tinton Manor, St. Tudy, Cornwall; s. Tinton Masterpiece 2nd 6381, d. Tinton Black Bess 20th 17236.

3185 II. (£5.)—WALTER J. WARREN, Deacons Farm, Staplegrave, Taunton, for **Kibhear Lady Alice** 17246, born May 6, 1918, farrowed Jan. 12; s. Drayton Disappointment 2nd 4573, d. Kibhear Lady Annie 14050 by Cornwood Magistrate 4371.

3181 III. (£3.)—S. F. EDGE, Gallups Homestead, Ditchling, Sussex, for **Vahan Queen Melva** 20642, farrowed Jan. 2; s. Vahan Melva 2nd 5691, d. Vahan Queen 2nd 15514 by Hasketon Lux 19th 3745.

3181 IV. (£2.)—ALFRED PLATLE, Basingbourn, Cambs, for **Basingbourn Countess** 1st 26832, born Jan. 25, 1918, farrowed Feb. 2; s. Cleave General 6367, d. Basingbourn Maid 2nd 14472 by Basingbourn Duke 8807.

3187 V. (£2.)—MISS KAY-MOAT, The First Farm, Malvern Wells, Worcs, for **McHeather Lassie** 1st 18888; s. Ratby Morton Lad 6345, d. Cornwood Lass 49th 15410 by Border Prince 4843.

3194 R. N.—THOMAS WARNE, Trevisquite Manor, St. Mabyn, Cornwall, for **Trevisquite Levelsides** 7th.  
H. C.—3177, 3179, 3182, 3183, 3193.

### Class 414.—Large Black Sows, farrowed in 1919. [33 entries.]

3210 I. (£10, & Champion.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for **Witham Bess** 2nd 2740, born Feb. 21, 1919, bred by P. R. Moore, Witham, Essex; s. Tiptree Roger 5539, d. Trevisquite Witham 24700 by Boss of the Valley 3855.

3212 II. (£5, & R. N. for Champion.)—DR. A. R. KAY, The Manor House, Blakeney, Norfolk, for **Newland Dandilion** 25240, born Jan. 12, 1919; s. Basingbourn Newland Harold 7717, d. Basingbourn Newland Dora 18842 by Royal Sovereign 4593.

3222 III. (£3.)—JOHN C. OLIVER, Woodland Valley, Ladock, Cornwall, for **Beauty of the Valley** 12th 16769 by Bixley None Such 3695.

3220 IV. (£2.)—BURG-GEN, SIR GODFREY MORGAN, AND MAJOR T. J. LACY, Camp Farm, Stroud, Glos, for **Camp Beauty** 29054, born Jan. 27; s. Docking Sport 8035, d. Docking Limelight 21804 by Lytchmere Headlight 6567.

3204 V. (£2.)—S. F. EDGE, Gallups Homestead, Ditchling, Sussex, for **Roseland Vahan Royal** 1st 31005, born Jan. 10, 1919, bred by G. W. Tolpitt, Roseland Farm, Wivelsfield Green, Haywards Heath, Sussex; s. Vahan Perfection 6573, d. Lewes Nightingale Roseland 17439 by Carnwood Don John 4169.

3229 R. N.—W. S. WARD, Menna Farm, Grampound Road, Cornwall, for **Menna Queen** 33rd.  
H. C.—3306, 3307, 3217, 3218, 3219. C.—3203, 3208, 3216, 3223, 3225.

### Class 415.—Three Large Black Sows, farrowed in 1920. [23 entries.]

3238 I. (£10.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for sows, born Jan. 3; s. Cornwood Tartar 8851, d. Tinton Black Bess 22nd 26564 by Tinton Masterpiece 2nd 6381.

3232 II. (£5.)—HARRY E. BASTARD, Tinton Manor, St. Tudy, Cornwall, for sows, born Jan. 1; s. Cornwood King John 8271, d. Tinton Black Bess 21st 17236 by Boss of the Valley 3855.

3233 III. (£3.)—F. P. BROWN, Kingston Farm, Chillerton, I.O.W., for **Kingston Fancy** 37076, **Kingston Fashion** 37080, **Kingston Famous** 37082, born Jan. 14; s. Trevisquite Surprise 9583, d. Drayton Lady Newport 1st 18616 by Basingbourn Cliff 6337.

3249 IV. (£2.)—JOHN C. OLIVER, Woodland Valley, Ladock, Cornwall, for sows, born Jan. 2; s. Trevelios Primie, d. Beauty of the Valley 20th 19642 by Valley Togo 4673.

3254 V. (£2.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for sows, born Jan. 7 and 8; s. Brent Conqueror 12191, d. Bentley Aurora 22856, Bentley Cynthia 22830, and Bentley Athena 22854 by Lord Shingay 6377.

3235 R. N.—S. F. EDGE, Gallups Homestead, Ditchling, Sussex, for **Vahan Queen Bellona** 1st, **Vahan Queen Bellona** 2nd, and **Vahan Queen Hominy** 1st.  
H. C.—3240, 3242, 3246, 3249, 3253. C.—3236, 3250, 3252.

<sup>1</sup> Silver Challenge Cup, value Twenty Guinea, given by the Large Black Pig Society for the best Large Black Sow in Classes 413 and 414.

# Award of Live Stock Prizes at Darlington, 1920. cxxiii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

## Lincolnshire Curly-coated.

**Class 416.**—*Lincolnshire Curly-coated Boars, farrowed in or before 1918.*  
[1 entry.]

- 3255 I. (£10. & Champion.<sup>1</sup>)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Kirkby 41213, born March 3, 1913, bred by Norton Scorer, East Kirkby s. Highfield Swell 3863, d. East Kirkby Ladylike 1st 10938 by Yaxley Donor 3471.

**Class 417.**—*Lincolnshire Curly-coated Boars, farrowed in 1919.*<sup>2</sup>  
[2 entries.]

- 3257 I. (£10. & R. N. for Champion.)—GEORGE FREIR, Toletorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Royal, born Jan. 2; s. Deeping East Kirkby, d. Deeping Royal 6th by Deeping Bold King.  
3258 II. (£5.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Surfleet, born Feb. 10; s. Wigtoft Kirkby 4213, d. Wigtoft Favourite 4th 11373 by Midville Knockout 4077.

**Class 418.**—*Lincolnshire Curly-coated Boars, farrowed in 1920.*  
[4 entries.]

- 3360 I. (£10.)—GEORGE FREIR, Toletorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Bold Boy 1st, born Jan. 3; s. Charnwood Dick 7th, d. Deeping Marshland 10808 by Bold King 2807.  
3261 II. (£5.)—GEORGE FREIR, for Deeping Bold Boy 2nd, born Jan. 3; s. Charnwood Dick 7th, d. Deeping Marshland 10808 by Bold King 2807.  
3258 III. (£3.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for boar, born Jan. 10; s. Wigtoft Charnwood, d. Wigtoft Mercian 6th 11390 by Midville Knockout 4077.  
3258 R. N.—F. E. BOWSER.

**Class 419.**—*Lincolnshire Curly-coated Breeding Sows, farrowed in or before 1918.* [5 entries.]

- 3265 I. (£10. & Champion.<sup>3</sup>)—GERSHOM SIMPSON, Caythorpe, Lowdham, Notts., for Charnwood Jewel 10th 11358, born Jan. 20, 1913, farrowed Jan. 25; s. Charnwood Friar 9th 3777, d. Charnwood Chestnut 7th 10994 by Charnwood Hero 2nd 5511.  
3265 II. (£5.)—GEORGE FREIR, Toletorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Marshland 10808, born Aug. 10, 1919, farrowed Jan. 3, bred by Leopold Hurvey, Spalding; s. Bold King 2807, d. Marshland Bohtail 10146 by Marshland Duke 2073.  
3264 III. (£3.)—GERSHOM SIMPSON, for Charnwood Jewel 5th 10973, born Feb. 2, 1916, farrowed Jan. 4; s. Charnwood Friar 2nd 3261, d. Charnwood Jewel 2nd 8738 by Crowland General 2125.  
3262 R. N.—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Mercian 4th.  
H. C.—3266.

**Class 420.**—*Lincolnshire Curly-coated Sows, farrowed in 1919.* [7 entries.]

- 3267 I. (£10. & R. N. for Champion.<sup>4</sup>)—F. E. BOWSER, Wigtoft, Boston, Lincs., for Wigtoft Sensation 38th, born Feb. 6; s. Wigtoft Kirkby 1213, d. Wigtoft Sensation 35th 11592 by Midville Knockout 4077.  
3269 II. (£5.)—GERSHOM SIMPSON, Caythorpe, Lowdham, Notts., for Charnwood Countess 4th, born Feb. 20; s. Keal Dick 3801, d. Charnwood Duchess 6th 9562 by Gibraltar Friar 6th 2687.  
3268 III. (£3.)—GEORGE FREIR, Toletorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Ashleaf, born Jan. 2; s. Deeping Earl Kirkby, d. Deeping Royal 6th by Deeping Bold King.  
3270 R. N.—GERSHOM SIMPSON, for Charnwood Countess 5th.  
H. C.—3272, 3273.

**Class 421.**—*Three Lincolnshire Curly-coated Sows, farrowed in 1920.*  
[2 entries.]

- 3275 I. (£10.)—GEORGE FREIR, Toletorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Lady 1st, 2nd, and 3rd born Jan. 5; s. Charnwood Dick, d. Deeping Marshland 10808 by Bold King 2807.  
3274 II. (£5.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for sow, born Jan. 10; s. Wigtoft Charnwood, d. Wigtoft Mercian 6th 11390 by Midville Knockout 4077.

<sup>1</sup> Champion Prize of £5 5s. given by the Lincolnshire Curly-coated Pig Breeders' Association for the best Boar in Classes 416-418.

<sup>2</sup> Prizes given by the Lincolnshire Curly-coated Pig Breeders' Association.

<sup>3</sup> Champion Prize of £5 5s. given by the Lincolnshire Curly-coated Pig Breeders' Association for the best Sow in Classes 419 and 420.

# xcxiv Award of Live Stock Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

## Gloucestershire Old Spots.

**Class 422.**—*Gloucestershire Old Spots Boars, farrowed in or before 1918.* [11 entries.]

- 3276 I. (£10, Champion<sup>1</sup>, & Champion<sup>2</sup>)—CAPT. ROBERT R. BRASSEY, Heythrop Park, Chipping Norton, Oxon., for Winterbourne Blanco 483, born Feb. 1917, bred by Henry Matthews, Down Farm, Winterbourne, Bristol; s. Winterbourne Captain 121, d. Winterbourne Blanche 28.  
 3281 II. (£5.)—REGINALD H. HOLE, Clapcote, Grittleton, Chippingham, Wilts., for Kitesnest Jester 881, born March 25, 1918, bred by F. H. Rea, Kitesnest, Wotton-under-Edge, Glos.; s. Coleshill Bradley 240, d. Kitesnest Judy 2nd 717 by Bradley Pride 132.  
 3285 III. (£3.)—SIR W. G. WATSON, BT., Sulhampstead House, Reading, for Gilslake President 856, born Feb. 4, 1918, bred by H. Thomas, Endleigh Court Farm, Spetchley, Worcester; s. Woodlands Jumbo 71, d. Gilslake Wonder 279 by Gilslake Best Boy.  
 3278 IV. (£2.)—JOHN BROMET, Golf Links Farm, Tadcaster, for Croxton Fickle Boy 865, born Sept. 28, 1918, bred by J. Gibson Whittles, The Mount, Croxton, Staffs.; s. Gilslake Duke 156, d. Langstone Fiction 944 by Berkeley Masterpiece 187.  
 3280 R. N.—FRANCY WEBSTER CORY, Manor Farm, Notgrove, Bourton-on-the-Water, Glos., for Shenstone Boy.  
 H. C.—3322.

**Class 423.**—*Gloucestershire Old Spots Boars, farrowed in 1919.* [17 entries.]

- 3287 I. (£10, & R.N. for Champion<sup>1</sup>)—THE EARL OF BERKELEY, Berkeley Castle, Glos., for Berkeley John, born March 1; s. Berkeley Noble 445, d. Berkeley Jane 5th by Woodlands Julian 214.  
 3293 II. (£5.)—T. KING, Lower Barnes, Wotton-under-Edge, Glos., for Ithells Champion 2080, born April 25, bred by J. Philpot, Charfield, Glos.; s. Coleshill Bradley 240, d. Barmald by Bradley Pride 132.  
 3290 III. (£3.)—SIR F. HERVEY-BATHURST, BT., D.S.O., Somborne Park, King's Somborne, Hants., for Hodgcombe Hero 3016, born Oct. 21, bred by A. J. Hubert, Hodgcombe, Uley, Glos.; s. Berkeley Farmer, 890, d. Hodgcombe Louis 480 by Hodgcombe Masterpiece 35.  
 3291 IV. (£2.)—WILLIAM H. HITCH, Elkstone, Cheltenham, for Elkstone Major, born July 27; s. Langstone Ideal 661, d. Elkstone Mary 3rd 3371 by Birdlip Hero 336.  
 3300 V. (£2.)—TOM WELLS, The Wrand Poultry Farm, The Manor, Galphay, Ripon, for Sporting Major 1633, born June 9, bred by Captain H. P. Hamilton, Breinton, Hereford; s. Gilslake Major, 622, d. Sporting Beauty 1912.  
 3296 R. N.—ALFRED G. NYE, Well Place, Penshurst, Kent, for Priory Fellow.

**Class 424.**—*Gloucestershire Old Spots Boars, farrowed in 1920.* [34 entries.]

- 3326 I. (£10.)—JOHN H. THOMAS, Cudleigh Court, Spetchley, Worcester, for Gilslake Sportsman, born Jan. 28; s. Cleeve Hill Actor 664, d. Gilslake Duchess 3rd 2639 by Oaklands Hero 414.  
 3336 II. (£5.)—R. WILLIAMSON & W. HOLLAND, Rhyd Broughton Farm, Wrexham, for Rhyd Duke 11th, born Jan. 22; s. Holwell King 1029, d. Gilslake Doreen 1889 by Woodlands Jumbo 71.  
 3331 III. (£3.)—SIR W. G. WATSON, BT., Sulhampstead House, Reading, for Sulhampstead President 1st, born Jan. 15; s. Gilslake President 856, d. Basildon Spot 1st 2352 by Wold Victor 181.  
 3335 IV. (£2.)—R. WILLIAMSON & W. HOLLAND, for Rhyd Duke 10th, born Jan. 22; s. Holwell King 1029, d. Gilslake Doreen 1889 by Woodlands Jumbo 71.  
 3310 V. (£2.)—REGINALD H. HOLE, Clapcote, Grittleton, Chippingham, Wilts., for Clapcote Lloyd, born Jan. 19; s. Kitesnest Jester 881, d. Clapcote Lisinda 813 by Clapcote Lad 10.  
 3333 R. N.—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts., for Coleshill Hero.  
 H. C.—3304, 3305, 3307, 3308, 3313, 3332.

**Class 425.**—*Gloucestershire Old Spots Breeding Sows, farrowed in or before 1918.* [20 entries.]

- 3353 I. (£10, & R.N. for Champion<sup>1</sup>)—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts., for Coleshill Countess 1373, born July 21, 1918, farrowed Feb. 18; s. Kitesnest Recruiter 221, d. Portbury Emily 5th 356 by Woodlands King.

<sup>1</sup> Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Boar in Classes 422-424.

<sup>2</sup> Silver Challenge Cup, value Forty Guinea, given through the Gloucestershire Old Spots Pig Society for the best Boar or Sow in Classes 422-426.

<sup>3</sup> Prizes given by the Gloucestershire Old Spots Pig Society.

<sup>4</sup> Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Sow in Classes 425 and 426.

## Award of Live Stock Prizes at Darlington, 1920. cxxx

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

- 3333 **II. (45).**—R. A. BENNETT & ALGAR HOWARD, Thornbury, Glos., for **Thornbury Beau** 1167, born July 17, 1917, farrowed Feb. 5: s. Forthay Prince 104, d. Thornbury Beatrice 61.
- 3340 **III. (43).**—JOHN HENRY PERRITT, Hill House, Old Sodbury, Glos., for **Oaklands Mabel** 5th 2076, born May 7, 1918, farrowed Feb. 14, bred by H. C. Baker, Oaklands, Almondsbury, Glos.; s. Nutgrove Edward 92, d. Oaklands Nancy 2nd 654 by Woodlands Jumbo 71.
- 3354 **IV. (42).**—W. G. WILLIAMS & SONS, for **Coleshill Duchess** 1379, born Sept. 18, 1917, farrowed March 3, bred by Walter G. Williams; s. Kitesnest Recruiter 221, d. Portbury Emily 4th 353 by Woodlands King 68.
- 3350 **V. (42).**—JOHN H. THOMAS, Cudleigh Court, Spetchley, Worcester, for **Gislake Duchess** 3rd 2338, born July 21, 1918, farrowed Jan. 26: s. Oaklands Hero 414, d. Gislake Duchess 2nd 600 by Woodlands Jumbo 71.
- 3341 **R. N.**—H. L. LYON, Hillam Hall, Monk Fyston, Yorks., for **Hillam Foundation**.

**Class 426.**—*Gloucestershire Old Spots Sows, farrowed in 1919.*  
[21 entries.]

- 3364 **I. (410, Champion),<sup>1</sup> & R. N. for Champion 2)**—CAPT. H. P. HAMILTON, Breinton, Hereford, for **Sporting Perfection** 1631, born June 3, bred by H. Savage, H-wath Villa, Breinton; s. Gislake Major 622, d. Sporting Beauty 1912.
- 3370 **II. (45).**—A. R. KIRBY, Fawley, nr. Hereford, for **Ideal** 3851, born April 15; s. Gislake Major 622, d. Wye Tulip 1938 by Chalfield General 247.
- 3376 **III. (43).**—ALBERT WALTER TROTMAN, Langston Court, Newport, Mon., for **Berkeley Woodlark** 3490, born March 23, bred by the Earl of Berkeley, Berkeley Castle, Glos.; s. Woodlands Julia 214, d. Woodlands Mela 319 by Woodlands Warrior 78.
- 3362 **IV. (42).**—CAPT. H. P. HAMILTON, for **Hampton Sallie** 2nd 1311, born April 2, bred by F. Hobbs, Maisey Hampton, Glos.; s. Cotswold Monarch 314, d. Hampton Sallie by Williamstrip Karl 85.
- 3371 **V. (42).**—THOMAS B. A. LAYER, Oakleaze, Berkeley, Glos., for **Falfield Fuchsia** 4725, born July 12, bred by Russell Thomas, Henegaue Court, Falfield, Glos.; s. Oakleaze Edwin 507, d. Falfield Favourite 2725.
- 3358 **R. N.**—JOHN R. J. ALPASS, Salter Street, Berkeley, Glos.  
H. C.—3368, 3367.

**Class 427.**—*Three Gloucestershire Old Spots Sows, farrowed in 1920.*  
[12 entries.]

- 3388 **I. (410).**—UNIVERSITY OF BRISTOL RESEARCH STATION, Long Ashton, Bristol, for **Ashton Countess, Ashton Crystal, Ashton Charmer**, born Jan. 12: s. Daglingworth Prince 1122, d. Hobwell Daisy 2088 by Coleshill Monarch 404.
- 3381 **II. (45).**—JOHN BROMET, Golf Links Farm, Tadcaster, for **Golf Betty** 3rd, **Golf Betty** 4th, **Golf Betty** 5th, born Jan. 18; s. Croxton Fiddle Boy 813, d. Coombs Betty 3rd 2815 by Kendalshire Warrior 334.
- 3382 **III. (43).**—CAPT. H. P. HAMILTON, Breinton, Hereford, for **Dinedor Mystic, Dinedor Mist, Dinedor Belinda**, born Jan. 2 and Jan. 23; s. Gislake Major 622, ds. Dinedor Mirth 2883 by Chalfield General 247 and Lydney Bella 1041 by Newnham Beginner 69.
- 3380 **IV. (42).**—HENRY A. BROMET, Highfield, Tadcaster, for **Highfield Beattie** 1st, **Highfield Beattie** 2nd, **Highfield Beattie** 3rd, born Jan. 26; s. Selby Baron 10th 1224, d. Hillacn Beattie 4th 3288 by Knavesmire Roger 621.
- 3390 **R. N.**—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts., for **Coleshill Countess** 17th, 18th and 19th.  
H. C.—3379, 3383.

## Cumberland.<sup>3</sup>

**Class 428.**—*Cumberland Boars, farrowed in or before 1918* [6 entries.]

- 3396 **I. (410).**—WM. WHITE, Prestwick Hall, Ponteland, Newcastle-on Tyne, for **Sir Bronto** 737, born March 15, 1918, bred by Wm. Parkin-Moore, Whitehall, Mealsgate, Cumberland; s. Lockhills King 16, d. Lady Bronte 274, by King George 33.
- 3393 **II. (45).**—F. S. MARRIOTT, 28, Lightfoot Terrace, Ferryhill Village, Durham, for **Staggo** 1261, born June 16, 1918, bred by W. Parkin-Moore, Whitehall, Mealsgate, Cumberland; s. Lockhills King 16, d. Corn Leeks 1000 by Hard Cash 26.
- 3391 **III. (43).**—TOM CROPPER, 8 John Ashwood Street, Hamer, Rochdale, Lancs., for **Cashier** 673, born Jan. 26, 1918, bred by W. Draper, Bradley Hall, Eccleston, Chorley, Lancs.; s. Hard Cash 26, d. Bradley Queen 474.
- 3392 **R. N.**—WILLIAM JOHNSON, Low Mill, Bootle, Cumberland, for **Kings Ring**.

<sup>1</sup> Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Sow in Classes 425 and 426.

<sup>2</sup> Silver Challenge Cup, value Forty Guineas, given through the Gloucestershire Old Spots Pig Society for the best Boar or Sow in Classes 422-426.

<sup>3</sup> £25 towards these Prizes were given by the Cumberland Pig Breeders' Association.

## cxvii *Award of Live Stock Prizes at Darlington, 1920.*

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### **Class 429.—Cumberland Boars, farrowed in 1919. [3 entries.]**

- 3397 I. (£10, & Champion.)—JAMES C. BEATTIE, Aikton House Aikton, Wigton, Cumberland, for Squire of Aikton 1283, born March 31, bred by Isaac Gardhouse, Little Orton, Carlisle; s. Laversdale Monarch 43, d. Barclose Type 1159 by Caleb's Type 12.
- 3399 II. (£5)—JOHN HENRY TOPPING, Musgrave Hall, Skelton, Penrith, for Barclose Test Piece 1178, born March 31, bred by J. J. Wilson, Barclose, Scaleby, Carlisle; s. Hall House Monarch 693, d. Barclose Ideal 652 by Laversdale Monarch 43.

### **Class 430.—Cumberland Boars, farrowed in 1920. [1 entry.]**

- 3400 I. (£10, & R. N. for Champion.)—J. J. WILSON, Barclose, Scaleby, Carlisle, for Barclose Copyhead, born Feb. 29; s. Hall House Monarch 693, d. Barclose Ideal 652 by Laversdale Monarch 43.

### **Class 431.—Cumberland Breeding Sows, farrowed in or before 1918. [3 entries.]**

- 3402 I. (£10, & Champion.)—MATTHEW STAINTON, Law House, Wigton, Cumberland, for Agnes 588, born March 11, 1917, farrowed Feb. 28; s. The Possible 74, d. Longhead Susan 938 by Dan.
- 3403 II. (£5.)—JOHN STEEL, M.R.C.V.S., Southley, Wigton, Cumberland, for Susie 2nd 837, born June 24, 1917, farrowed April 1, bred by John Dixon, Bolton Wood Lane, Wigton; s. Oughterside 61, d. Young Susie 471 by Riga 62.

### **Class 432.—Cumberland Sows, farrowed in 1919. [4 entries.]**

- 3407 I. (£10, & R. N. for Champion.)—JOHN HENRY TOPPING, Musgrave Hall, Skelton, Penrith, Cumberland, for Skelton Minnie 1883, born Feb. 4, bred by Joseph Cogan, Mansion House, Kirkbride, Cumberland; s. Lord Roches 792, d. Jenny of the Mansion House 194 by Longhwaite Jack.
- 3404 II. (£5.)—SIR JOHN ANDERSON, BT., Dykehead Farm, Blackford, Carlisle, for Nancy of Barnett Rigg 1406, born Jan. 14, bred by J. F. Hall, Burnett Rigg, Thursby, Carlisle; s. Waver Lad 433, d. Longhead Betty 883 by George Again.
- 3406 III. (£3.)—JOHN STEEL, M.R.C.V.S., Southley, Wigton, Cumberland, for Little Beth 1611, born July 1; s. Tristram Shandy 429, d. Mrs. Culver 1084, by Waver Lad 433.
- 3405 R. N.—TOM CROPPER, 8 John Ashworth Street, Hamar, Rochdale, Lancs., for Bradley Lovely.

### **Class 433.—Three Cumberland Sows, farrowed in 1920. [1 entry.]**

- 3408 I. (£10.)—JOHN STEEL, M.R.C.V.S., Southley, Wigton, Cumberland, for sows, born Jan. 5; s. Tristram Shandy 429, d. Handsome Nell 609 by Caleb's Type 12.

## **Wessex Saddlebacks.<sup>3</sup>**

### **Class 434.—Wessex Saddleback Boars, farrowed in or before 1918. [2 entries.]**

- 3409 I. (£10, Champion, & R. N. for Champion.)—T. L. MARTIN, Ashe Warren House, Overton, Hants., for Ashe Plant 72, born Sept. 1918, bred by V. Hacker, Sherfield English, Romsey, Hants; s. Melchet Cooper 2, d. Sherfield Sister Susie 40 by Melchet Cooper 2.

### **Class 435.—Wessex Saddleback Boars, farrowed in 1919. [2 entries.]**

- 3411 I. (£10.)—MISSES F. DONISTHORPE & G. DE MONTGOM, Eastington Hall, Upton-on-Severn, for Eastington Nimrod 81, born April 15.
- 3412 II. (£5.)—ERNEST RALLS, 19 Market Place, Romsey, Hants, for Cattistock Best Born 87, born April 26; s. Caer Kingmaker 9, d. Cattistock Bracelet 55.

### **Class 436.—Wessex Saddleback Boars, farrowed in 1920. [8 entries.]**

- 3415 I. (£10, & R. N. for Champion.)—W. J. MALDEN, Overton, Hants, for Oakley Haig 218, born Jan. 9, bred by V. Hacker, Sherfield English, Hants; s. Cattistock Norman 6, d. Sherfield Sister Susie 40.
- 3416 II. (£5.)—T. L. MARTIN, Ashe Warren House, Overton, Hants, for Holbury Leader 188, born Feb. 18, bred by G. R. Southwell, Holbury Farm, Lookerley, Romsey; s. Norman Hero 27, d. Holbury Lassie 101.
- 3418 III. (£3.)—ERNEST RALLS, 19 Market Place, Romsey, Hants, for Cattistock Deputy Master, born Jan. 26; d. Cattistock Ridgway 293.
- 3419 R. N.—SIR W. G. WATSON, BT., Sulhamstead House, Reading, for Kennet Duke. H<sup>o</sup> C.—3414. C.—3413.

<sup>1</sup> Champion Prize of £5 given by the Cumberland Pig Breeders' Association for the best Cumberland Boar in Classes 428-430.

<sup>2</sup> Champion Prize of £5 given by the Cumberland Pig Breeders' Association for the best Cumberland Sow in Classes 431 and 432.

<sup>3</sup> £25 towards these Prizes were given by the Wessex Saddleback Pig Society.

<sup>4</sup> Champion Gold Medal, given by the Wessex Saddleback Pig Society, for the best Wessex Saddleback Boar in Classes 434-436.

<sup>5</sup> Silver Challenge Cup, given by the Wessex Saddleback Pig Society for the best Wessex Saddleback Boar or Sow in Classes 434-438.

## Award of Live Stock Prizes at Darlington, 1920. cxxvii

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

### Class 437.—*Wessex Saddleback Breeding Sows, farrowed in or before 1918.*

[4 entries.]

- 3424 I. (£10, Champion<sup>1</sup>, & Champion<sup>2</sup>.)—SIR W. G. WATSON, BART., Sulhampstead House, Reading, for Kennet Beauty 222, born 1914, farrowed Jan. 3, bred by James Attrill, Brightstone, Isle of Wight; s. Duke of Brightstone 22, d. Pride of Brightstone 49 by King of Brightstone.
- 3421 II. (£5.)—T. L. MARTIN, Ashe Warren House, Overton, Hants, for Ashe Mercy 243, born Sept. 1918, farrowed March 5, bred by V. Hacker, Sheffield English, Romsey, Hants; s. Melchet Cooper 2, d. Sheffield Sister Susie 40 by Melchet Cooper.
- 3422 III. (£3.)—THE RT. HON. SIR ALFRED MOND, BART., Melchet Court, Romsey, Hants, for Melchet Kathleen 14, born 1917, farrowed Feb. 26; s. Melchet King, d. Melchet Winter by Melchet King.

### Class 438.—*Wessex Saddleback Sows, farrowed in 1919.* [4 entries.]

- 3425 I. (£10, & E. N. for Champion<sup>2</sup>.)—MISS F. DONISTHORPE & G. DE MONTGOM, Eastington Hall, Upton-on-Severn, for Eastington Darke Ladye, 270, born April 15, 1919.
- 3428 II. (£5.)—ERNEST RALLS, 19 Market Place, Romsey, Hants, for Cattistock Ridgway 283, born March, bred by J. Cross & Son, Ridge Farm, Romsey.
- 3427 III. (£3.)—THE RIGHT HON. SIR ALFRED MOND, BART., Melchet Court, Romsey, Hants, for Norman Nitrate 321, born March 21, bred by W. M. G. Singer, Norman Court, Salisbury, Wilts; s. Norman Hero 27, d. Norman Empress 45.
- 3426 E. N.—T. L. MARTIN, Ashe Warren House, Overton, Hants, for Norman Nell.

### Class 439.—*Three Wessex Saddleback Sows, farrowed in 1920.* [4 entries.]

- 3430 I. (£10.)—W. J. MALDEN, Overton, Hants, for Halbury Lily 628, Athelstone Princess 711, Oakley Grace 801, born Jan. 9, bred by V. Hacker, Sheffield English, Romsey, Hants, and J. R. Southwell, Halbury Farm, Lockerley, ss. Norman Hero 27 and Cattistock Norman 8, d. Halbury Lassie 101 and Sheffield Sister Susie 40.
- 3429 II. (£5.)—MISS F. DONISTHORPE & G. DE MONTGOM, Eastington Hall, Upton-on-Severn, for Eastington Queen of Hearts, Eastington Chers, Eastington Valkyrie, born March 31 and April 1; s. Eastington Nimrod 81, d. Eastington Gamble 251 and Eastington Amazon 271 by Sire Baron of Brightstone III.
- 3432 III. (£3.)—SIR W. G. WATSON, BART., Sulhampstead House, Reading, for Kennet Beauty 1st 620, 2nd 621 and 3rd 622, born Jan. 3; s. Cattistock Nipper 7, d. Kennet Beauty 222 by Duke of Brightstone 22.

## Essex.<sup>3</sup>

### Class 440.—*Essex Boars, farrowed in or before 1918.* [4 entries.]

- 3435 I. (£10.)—JOHN STUBBINS, Abbots Hall, Wakering, Essex, for Pound Chief 57, born in Aug. 1918, bred by C. W. Raynor, Lowleys, Great Leighs, Essex.
- 3436 II. (£5.)—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for Barnston Baron, born Oct. 27, 1918, bred by George Baynes, Broxted Hall, Dunmow, Essex; s. Church End Champion.
- 3433 III. (£3.)—JAMES MAYHEW BALLS, Braintree, Essex, for Laguna Champion 52, born Aug. 11, 1918, bred by George Baynes, Senr., Broxted, Dunmow, Essex.
- 3434 E. N.—W. & H. MARRIAGE & SONS, Chelmer Mills, Chelmsford, for Peace Adam.

### Class 441.—*Essex Boars, farrowed in 1919.* [3 entries.]

- 3439 I. (£10.)—EDWARD HERBERT SYKES, Fryinging Grange, Ingatstone, Essex, for Barnston Claudius, born April 22, 1919, bred by H. B. Turner, Barnston Hall, Dunmow; s. Broxted Duke, d. Barnston Cassandra.
- 3438 II. (£5.)—LADY ANGELA FORBES, Yew Tree House, Westfield, Sussex, for Westfield Hero 1186, born Aug. 24, bred by F. R. Smith, Rutlands, Felstead, Essex; s. Pound Chief 57, d. Rutlands Primrose 38.
- 3437 III. (£3.)—GEO. F. BODDY, Marsham, Norwich, for Peace Cabin Boy, born in July, bred by Chas. Cousins, Stisted, Essex; s. Peace Benjamin 8, d. Peace Angelina 10.

### Class 442.—*Essex Boars, farrowed in 1920.* [6 entries.]

- 3442 I. (£10.)—CHARLES COUSINS, Jenkins, Stisted, Braintree, Essex, for boar, born Jan. 12.
- 3441 II. (£5.)—CHARLES COUSINS, for boar, born Jan. 10.
- 3445 III. (£3.)—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for Barnston Baron 5th, born Feb. 4, 1920; s. Rutlands Pugnacious 443, d. Rutlands Beauty 33.
- 3440 E. N.—H. S. ASHTON, Trueloves, Ingatstone, Essex, for Trueloves Admiral. H. C.—3443. C.—3444.

<sup>1</sup> Silver Challenge Cup, given by the Wessex Saddleback Pig Society for the best Wessex Saddleback Boar or Sow in Classes 434-438.

<sup>2</sup> Champion Gold Medal, given by the Wessex Saddleback Pig Society, for the best Wessex Saddleback Sow in Classes 437 and 438.

<sup>3</sup> £25 towards these Prizes were given by the Essex Pig Society.



## CCXVIII Award of Poultry Prizes at Darlington, 1920.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor.]"

### Class 443.—*Essex Breeding Sows, farrowed in or before 1918.* [6 entries.]

- 3446 I. (210, & R. N. for Champion.)—R. BROWNING-SMITH, The Brook, Great Tey, Essex, for Brook Perfectus, born Jan. 15, 1918, farrowed Jan. 10, bred by C. Neill, Arlsford, Essex.  
 3451 II. (25.)—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for Rutlands Beauty, born 1912, farrowed Feb. 3, bred by F. R. Smith, Rutlands, Felstead, Chelmsford.  
 3450 III. (23.)—W. G. HARVEY, Kentish Farm, Stisted, Braintree, Essex, for Woolmer Betsay 163, farrowed April 20.  
 3448 R. N.—A. T. GREENSLADE, Little Walden Park, Saffron Walden, Essex, for Walden Duchess.

### Class 444.—*Essex Sows, farrowed in 1919.* [9 entries.]

- 3457 I. 210, & Champion.)—W. & H. MARRIAGE & SONS, Chelmer Mills, Chelmsford, for Chelmer Princess 234, born March 20; s. Chelmer Boy 820, d. Chelmer Crozier's Queen 231 by Gomers Admiral 162.  
 3453 II. (25.)—GEO. F. BODDY, Marsham, Norwich, for Tilty Duchess 486, born in Aug., bred by H. Chann, Dimmott; d. Tilty Jenny 137.  
 3454 III. (23.)—GEO. F. BODDY, for sow, born in Sept., bred by Geo. Baynes, Broxsted Essex; s. Broxsted Duke 115, d. Broxsted Fashion 99 by Chief.  
 3458 R. N.—EDWARD HERBERT SIKES, Fryerning Grange, Ingatstone, Essex, for Robjohn's Beauty.  
 H. C.—3456. C.—3472, 3450.

### Class 445.—*Three Essex Sows, farrowed in 1920.* [3 entries.]

- 3461 I. (210.)—CHARLES COUSINS, Jenkins, Stisted, Braintree, Essex, for sows, born Jan. 10.  
 3463 II. (25.)—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for Barnston Bianca 2nd, Barnston Bianca 3rd, Barnston Bianca 4th, born Feb. 3; s. Rutlands Pugnaucous 413, d. Rutlands Beauty 33.  
 3462 III. (23.)—A. T. GREENSLADE, Little Walden Park, Saffron Walden, Essex, for Walden Princess 110, Walden Pride 1108, Walden Delight 1110, born Jan. 28, bred by George Baynes, Broxsted Hall, Essex; s. Duke 115, d. Bashful 113 by Chief.

## POULTRY.

By "Cock," "Hen," "Gander," and "Goose," are meant birds hatched previous to January 1, 1920; and by "Cockerel" and "Pullet" are meant birds hatched in 1920.

The Prizes in each Class are as follows:—First Prize, 30s. Second Prize, 20s. Third Prize, 10s.

### Class 446.—*Silver Grey Dorking Cocks.* [4 entries.]

- 2 I. & Special.—C. AITKENHEAD, Carr House Farm, New Seaham, Co. Durham.  
 3 II. & I III.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.

### Class 447.—*Silver Grey Dorking Hens.* [3 entries.]

- 5 I. & R.N. for Special? & 7 II.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.

### Class 448.—*Dark Coloured Dorking Cocks.* [8 entries.]

- 13 I. & Special.—RALPH ALTY, Buckshaw Hall, Fuxton, Chorley.  
 11 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.  
 6 III.—C. AITKENHEAD, Carr House Farm, New Seaham, Co. Durham.  
 9 R. N.—WILLIAM M. WRIGHTSON, West Terrace, Stokeley.  
 H. C.—14, 15. C.—10.

### Class 449.—*Dark Coloured Dorking Hens.* [5 entries.]

- 17 I. & R. N. for Special.—C. AITKENHEAD, Carr House Farm, New Seaham.  
 13 II.—RALPH ALTY, Buckshaw Hall, Fuxton, Chorley.  
 19 III.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.  
 20 R. N.—MISS MARGARET FAWCETT, Ormesby S.O., Yorks.

<sup>1</sup> Champion Cup given by the Essex Pig Society for the best Essex Boar or Sow in Classes 443-444.

<sup>2</sup> Special Prize, value £1 1s., given by the Dorking Club for the best Silver Grey Dorking.

<sup>3</sup> Special Prize, value £1 1s., given by the Dorking Club for the best Dark Coloured Dorking.

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## **Class 450.—Dorking Cockerels, any colour.**    [5 entries.]

- 22 I. & Special.<sup>1</sup>—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.  
 25 II. & 21 R. N.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.  
 24 III.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.

## **Class 451.—Dorking Pullets, any colour.**    [4 entries.]

- 28 I. & R. N. for Special.<sup>1</sup>—C. AITKENHEAD, Carr House Farm, New Seabam.  
 29 II.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.  
 27 III.—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.

## **Class 452.—Langshan Cocks or Cockerels.**    [9 entries.]

- 33 I.—JAMES STEELAKER, New House, Stalmine, Poulton-le-Fylde.  
 31 II.—J. T. GROVES, Elfordleigh, Plympton, South Devon.  
 34 III.—P. S. TWIGG, Clipshead Farm, Bradbourn, Ashbourne, Derby.  
 38 R. N.—BEN. WILKINSON, Towngate, Hipperholme, near Halifax.  
       H. C.—37.        C.—35.

## **Class 453.—Langshan Hens or Pullets.**    [7 entries.]

- 40 I.—J. W. WALKER, Normanstead, Henley-on-Thames.  
 41 II. & 45 III.—W. J. PORTER, Post Office, Stalmine, Poulton-le-Fylde.  
 43 R. N.—S. T. ASHTON, Hall Street, Glossop.

## **Class 454.—Croad Langshan Cocks or Cockerels.**    [11 entries.]

- 53 I.—E. NEWALL, Gravel, Winsford, Cheshire.  
 42 II. & 51 III.—HERBERT P. MULLENS, The Red House, Ovington, Winchester.  
 52 R. N.—ALBERT BIRTWISLE, 86 Chester Road, Northwich, Cheshire.  
       H. C.—47.        C.—50.

## **Class 455.—Croad Langshan Hens or Pullets.**    [10 entries.]

- 60 I.—H. COLLIER, Rolleston Hall, Gardens.  
 61 II. & 63 R. N.—THOMAS RICHARDS, 17 Church Street, Loanhead, Midlothian.  
 57 III.—HERBERT P. MULLENS, The Red House, Ovington, Winchester.  
       H. C.—63.        C.—60.

## **Class 456.—Brahma Cocks or Cockerels.**    [8 entries.]

- 71 I.—M. EWBANK, Cawton, Hovingham, Malton.  
 70 II.—S. HOWARD, Bridge Street, Brackley.  
 74 III. & 72 R. N.—CAPT. G. H. COOKSON, Plas Padarn, Llanbadarn, Aberystwyth.  
       H. C.—62.

## **Class 457.—Brahma Hens or Pullets.**    [6 entries.]

- 78 I.—M. MCKNIGHT, Colville Cottage, 37 Main Street, Dalmellington, Ayrshire.  
 77 II.—A. BAILEY, Waugh Brow, Moberley, near Knutsford.  
 80 III.—R. P. WHEADON, Ilminster, Somerset.  
 79 R. N.—A. WARWICK, St. Ann's Hill Poultry Farm, Carlisle.

## **Class 458.—Cochin Cocks or Cockerels.**    [5 entries.]

- 81 I., 83 II., & 85 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.  
 82 III.—ROBIN JACKSON, Badykes, Blantyre, Lanarkshire.

## **Class 459.—Cochin Hens or Pullets.**    [4 entries.]

- 88 I., 84 II., & 89 III.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.

## **Class 460.—Red Sussex Cocks.**    [7 entries.]

- 94A I. & Special.<sup>2</sup>—M. HARRISON, Shaw House, Wetherall, Carlisle.  
 95 II. & 92 R. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near  
       Stafford.  
 91 III.—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
       H. C.—94.        C.—93.

## **Class 461.—Red Sussex Hens.**    [8 entries.]

- 102 I. & R. N. for Special.<sup>2</sup> & 97 III.—JAMES RUSSEL, Mapleton, Edenbridge, Kent.  
 99A II.—M. HARRISON, Shaw House, Wetherall, Carlisle.  
 99 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.  
       H. C.—96.        C.—100.

## **Class 462.—Red Sussex Cockerels.**    [6 entries.]

- 107 I. & 104 II.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near  
       Stafford.  
 108 III.—G. W. H. ELLIS, The Manor House, Lingfield, Surrey.  
 103 R. N.—J. W. WALKER, Normanstead, Henley-on-Thames.  
       H. C.—105.

<sup>1</sup> Special Prize, value £1 1s., given by the Dorking Club for the best Dorking Chicken hatched in 1920.

<sup>2</sup> Special Prize given by the Sussex Poultry Club for the best Red Sussex.

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*Class 463.—Red Sussex Pullets. [4 entries.]*

- 109 I. & 111 E. H.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.  
 110 II.—J. W. WALKER, Normanstead, Henley-on-Thames.  
 112 III.—G. W. H. ELLIS, The Manor House, Lingfield, Surrey.

*Class 464.—Light Sussex Cocks. [16 entries.]*

- 118 I. & 123 II.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.  
 116 III.—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.  
 128 E. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 H. C.—127. C.—116.

*Class 465.—Light Sussex Hens. [17 entries.]*

- 133 I.—A. J. FALKENSTEIN, Rookhurst, Rotherfield, Sussex.  
 138 II., 144 III. & 131 E. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 H. C.—132, 141. C.—136, 140.

*Class 463.—Light Sussex Cockerels. [25 entries.]*

- 169 I. & E. N. for Special.<sup>1</sup>—W. H. COOK, LTD., Cook's Poultry Farm, Orpington, Kent.  
 166 II.—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
 116 III.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.  
 151 E. N.—R. P. PERCIVAL, Shuttingdon House, Tamworth.  
 H. C.—153, 180. C.—149, 158.

*Class 467.—Light Sussex Pullets. [35 entries.]*

- 172 I. & Special.<sup>1</sup>—G. W. H. ELLIS, The Manor House, Lingfield, Surrey.  
 178 II.—R. P. PERCIVAL, Shuttingdon House, Tamworth.  
 181 III.—S. H. FEARLESS, Edgham Farm, Crawley Down, Sussex.  
 197 E. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Heading.  
 H. C.—171, 188, 196. C.—174, 182, 185.

*Class 468.—Speckled Sussex Cocks. [17 entries.]*

- 212 I. & Special.<sup>2</sup>—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
 208 II.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 220 III.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road, Birmingham.  
 218 E. N.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.  
 H. C.—217. C.—206.

*Class 469.—Speckled Sussex Hens. [23 entries.]*

- 250 I. & E. N. for Special.<sup>2</sup>—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 243 II.—F. E. DERRHAM, Gables Poultry Farm, Doveridge, Derbyshire.  
 240 III.—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
 223 E. N.—COUNTS OF DERRY, Cowarth Park, Sunningdale, Berks.  
 H. C.—225, 236. C.—229, 239.

*Class 470.—Speckled Sussex Cockerels. [13 entries.]*

- 258 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 243 II.—SIR JAMES KNOTT, BT, Close House Home Farm, Wylam-on-Tyne.  
 252 III.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road, Birmingham.  
 253 E. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.  
 H. C.—247. C.—255.

*Class 471.—Speckled Sussex Pullets. [17 entries.]*

- 274 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 271 II.—W. H. COOK, LTD., Cook's Poultry Farm, Orpington, Kent.  
 286 III. & 280 E. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.  
 H. C.—261. C.—270.

*Class 472.—Brown Sussex Cocks. [5 entries.]*

- 279 I.—J. S. HEPBURN, Astley, Nuneaton.  
 276 II. & 280 E. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 278 III.—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
 H. C.—277.

<sup>1</sup> Special Prize given by the Sussex Poultry Club for the best Light Sussex.

<sup>2</sup> Special Prize given by the Sussex Poultry Club for the best Speckled Sussex.

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## Class 473.—Brown Sussex Hens. [7 entries.]

- 287 I. & Special<sup>1</sup> & 282 II.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 281 III.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.  
 286 R. N.—MRS. M. A. GRANT, Westlands, Horley, Surrey.  
 H. C.—283. O.—284.

## Class 474.—Brown Sussex Cockerels. [5 entries.]

- 288 I. & R. N. for Special<sup>1</sup> & 292 III.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.  
 291 II.—J. S. HEPBURN, Astley, Nunneaton.  
 289 R. N.—A. J. FALKENSTEIN, Rookhurst, Rotherfield, Sussex.  
 H. C.—290.<sup>2</sup>

## Class 475.—Brown Sussex Pullets. [6 entries.]

- 297 I. & 294 II.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.  
 294 III.—A. J. FALKENSTEIN, Rookhurst, Rotherfield, Sussex.  
 298 R. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.  
 H. C.—295. C.—296.

## Class 476.—Silver Campine Cocks or Cockerels. [9 entries.]

- 302 I. & Champion.<sup>3</sup>—D. J. JONES, Red Cottage, Llandilo.  
 299 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.  
 305 III.—W. E. HUTTON, Linden Avenue, Great Ayton, Yorks.  
 301 R. N.—F. G. HURT, Alderwasby Hall, Whatstandwell, Matlock.  
 H. C.—304, 307. C.—303.

## Class 477.—Silver Campine Hens or Pullets. [9 entries.]

- 315 I.—T. E. HARRISON, 19 Richmond Terrace, Wallbottle, Newburn-on-Tyne.  
 316 II.—F. G. HURT, Alderwasby Hall, Whatstandwell, Matlock.  
 309 III.—S. HINCHLIFF, Willoughbridge Lodge, Market Drayton.  
 H. C.—310, 311, 312, 314. C.—313.

## Class 478.—Gold Campine Cocks or Cockerels. [3 entries.]

- 318 I. & Champion.<sup>3</sup>—G. JACKSON, Huntingdon Road, Earlsdon, Coventry.  
 317 II. & 319 III.—REV. E. LEWIS JONES, Burton Rectory, Neyland, Pembrokeshire.

## Class 479.—Gold Campine Hens or Pullets. [1 entry.]

- 320 I.—REV. E. LEWIS JONES, Burton Rectory, Neyland, Pembrokeshire.

## Class 480.—White Wyandotte Cocks. [24 entries.]

- 344 I.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
 343 II.—E. WHITAKER, Carrs Farm, Hebden Bridge.  
 327 III.—F. RODDA, White Wyandotte Farm, Camborne, Cornwall.  
 349 R. N.—TOM H. FURNESS, Carlton House, Chesterfield.  
 H. C.—322, 327, 333, 345. O.—321, 324, 331, 333.

## Class 481.—White Wyandotte Hens. [19 entries.]

- 346 I.—CAPTAIN E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.  
 360 II.—E. WHITAKER, Carrs Farm, Hebden Bridge.  
 361 III.—H. P. DOUGLAS, The Woodlands, Crook S.O., Co. Durham.  
 359 R. N.—TOM H. FURNESS, Carlton House, Chesterfield.  
 H. C.—345, 349. O.—355, 356.

## Class 482.—White Wyandotte Cockerels. [21 entries.]

- 367 I. & Special.<sup>4</sup>—O. N. GOODR, The Haydens, Bloton, Bedford.  
 364 II. & R. N. for Special.<sup>4</sup>—JOHN WHARTON, Honeycott Farm, Hawes, Yorks.  
 371 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
 383 R. N.—H. P. DOUGLAS, The Woodlands, Crook S.O., Co. Durham.  
 H. C.—369, 374, 380. C.—372, 373, 375.

## Class 483.—White Wyandotte Pullets. [25 entries.]

- 394 I. & Special<sup>5</sup>, & 389 II. & R. N. for Special.<sup>5</sup>—JOHN WHARTON, Honeycott Farm, Hawes, Yorks.  
 393 III.—G. BLUNDELL, Blackleach House, Woodplumpton, near Preston.  
 404 R. N.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
 H. C.—391, 399, 406. C.—387, 393, 402.

<sup>1</sup> Special Prize given by the Sussex Poultry Club for the best Brown Sussex.

<sup>2</sup> Silver Medal given by the Campine Club for the best Silver Campine in Classes 476 and 477.

<sup>3</sup> Silver Medal given by the Campine Club for the best Gold Campine in Classes 478 and 479.

<sup>4</sup> Special Prize of 5s. given by the White Wyandotte Club, for the best Cockerel in Class 482.

<sup>5</sup> Special Prize of 5s. given by the White Wyandotte Club, for the best Pullet in Class 483.

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**Class 484.—Black Wyandotte Cocks or Cockerels.** [12 entries.]

- 416 I. & Special.<sup>1</sup> & 411 III.—ROGER HARGREAVES, Banks Farm, Whalley, Lancs.  
412 II.—TOM H. FURNESS, Carlton House, Chesterfield.  
415 R. N.—T. SIDDONS, Osgathorpe, Loughborough.  
H. C.—410, 419. C.—417.

**Class 485.—Black Wyandotte Hens or Pullets.** [6 entries.]

- 433 I. & R. N. for Special.<sup>1</sup>—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road, Birmingham.  
424 II.—ROGER HARGREAVES, Banks Farm, Whalley, Lancs.  
426 III.—T. J. ALTY, Vine Cottage, Pilling, near Garstang.  
426 R. N.—TOM ALLSOP, Wakebridge, Crich, Matlock.

**Class 486.—Gold or Silver Laced Wyandotte Cocks or Cockerels.** [5 entries.]

- 438 I. & 432 R. N.—C. CALVERT, Eastwood Mills, Keighley.  
430 II.—TOM H. FURNESS, Carlton House, Chesterfield.  
429 III.—J. RUNDLE, Churchtown Farm, Lantlivery, Lostwithiel, Cornwall.

**Class 487.—Gold or Silver Laced Wyandotte Hens or Pullets.** [10 entries.]

- 430 I.—C. CALVERT, Eastwood Mills, Keighley.  
435 II.—N. M. AGNEW, Oversley, Morley, Wilmotow, Cheshire.  
437 III.—H. SPENSLEY, Oaks Farm, Menston, and Leeds.  
434 R. N.—J. RUNDLE, Churchtown Farm, Lantlivery, Lostwithiel, Cornwall.  
H. C.—438, 441. C.—440.

**Class 488.—Blue Wyandotte Cocks or Cockerels.** [6 entries.]

- 446 I. & 444 II.—E. BARNES, Mossland Farm, Astley Road, Irlam, Manchester.  
447 III.—W. H. FAIRHURST, Ingle Knott, Moss Lane, Calf-head, Manchester.  
443 R. N.—MRS. W. HOLDSWORTH, The Central Station Hotel, Newcastle-on-Tyne.  
H. C.—445. C.—448.

**Class 489.—Blue Wyandotte Hens or Pullets.** [10 entries.]

- 454 I.—TOM H. FURNESS, Carlton House, Chesterfield.  
455 II. & 450 R. N.—E. BARNES, Mossland Farm, Astley Road, Irlam, Manchester.  
452 III.—I. SPENCER, 50, Park Road, Elland, Yorks.  
H. C.—451. C.—458.

**Class 490.—Columbian Cocks or Cockerels.** [17 entries.]

- 463 I. & Champion.<sup>2</sup>—D. BEARD, Lee Vale, Marple Road, Charlesworth, Broadbottom, Manchester.  
459 II. & R. N. for Champion.<sup>3</sup>—CAPT. F. L. STONE, Wootcote Poultry Farm, Crockham Hill, Eidenbridge.  
467 III.—N. HAMMETT, Myrtle Poultry Farm, Vicarage Lane, Marton.  
474 R. N.—L. H. WACE, Kingsland Poultry Farm, Beaminster, Dorset.  
H. C.—468. C.—471.

**Class 491.—Columbian Hens or Pullets.** [15 entries.]

- 482 I. & Champion.<sup>4</sup>—MISS J. KING, Stidcott Farm, Tytherington, near Falfield.  
483 II. & R. N. for Champion.<sup>4</sup>—L. H. WACE, Kingsland Poultry Farm, Beaminster, Dorset.  
489 III.—G. TOMPKIN, Marden, Kent.  
478 R. N.—N. HAMMETT, Myrtle Poultry Farm, Vicarage Lane, Marton.  
H. C.—479. C.—484.

**Class 492.—Wyandotte Cocks or Cockerels, any other variety.** [10 entries.]

- 492 I.—W. LEAR, Howard Cottage, Wetheral, near Carlisle.  
493 II. & 496 III.—J. G. MORTEN, Pentich, Derby.  
498 R. N.—MISS WOODMASS, Howard House, Gilsland, Carlisle.  
H. C.—497. C.—495.

**Class 493.—Wyandotte Hens or Pullets, any other variety.** [6 entries.]

- 500 I.—J. A. BOARDLEY, Clyne Road, Lancaster.  
502 II.—J. HODGE, 174 Cotswold Road, St. John's Lane, Bristol.  
501 III.—W. LEAR, Howard Cottage, Wetheral, near Carlisle.  
505 R. N.—MISS WOODMASS, Howard House, Gilsland, Carlisle.  
H. C.—504.

<sup>1</sup> Special Prize of 10s. 6d. given by the Black Wyandotte Club, for the best Black Wyandotte in Classes 484-485.

<sup>2</sup> Silver Spoon given by the Columbian Wyandotte Club, for the best Cock or Cockerel in Class 490.

<sup>3</sup> Silver Spoon given by the Columbian Wyandotte Club, for the best Hen or Pullet in Class 491.

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## Class 494.—*Buff Orpington Cocks*. [6 entries.]

- 509 I. & Champion.<sup>1</sup>—A. DODD, The Grove, Shavington, Crewe.
- 510 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
- 508 III.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks, Sussex.
- 511 R. N.—W. H. COOK, LTD, Cook's Poultry Farm, Orpington, Kent.
- 512 H. C.—506. C.—507.

## Class 495.—*Buff Orpington Hens*. [7 entries.]

- 518 I.—W. T. JEFFERIES, 105 Clouds Hill Road, St. George, Bristol.
- 512 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent.
- 516 III.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
- 513 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.

## Class 496.—*Buff Orpington Cockerels*. [10 entries.]

- 524 I. & 527 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent.
- 521 III. & 525 R. N.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks.
- H. C.—526. C.—522.

## Class 497.—*Buff Orpington Pullets*. [12 entries.]

- 530 I. & R. N. for Champion<sup>1</sup>, & 532 III.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks, Sussex.
- 538 II.—WHITE & DAVIDSON, Stoford Poultry Farm, Wellington, Somerset.
- 529 R. N.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
- H. C.—536. C.—537.

## Class 498.—*White Orpington Cocks*. [10 entries.]

- 548 I. & R. N. for Special.<sup>2</sup>—TOM H. FURNESS, Carlton House, Chesterfield.
- 541 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
- 549 III. & 550 R. N.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
- H. C.—545.

## Class 499.—*White Orpington Hens*. [8 entries.]

- 551 I. & Special.<sup>2</sup>—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
- 555 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent.
- 553 III.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
- 558 R. N.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
- H. C.—556. C.—552.

## Class 500.—*White Orpington Cockerels*. [7 entries.]

- 561 I. & Special.<sup>2</sup>—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
- 559 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
- 565 III.—MRS. O. H. LORD, Lilybrook Poultry Farm, Charlton Kings, Cheltenham.
- 562 R. N.—J. WARREN, Cross Tree, Marnhull, Dorset.
- H. C.—564. C.—560.

## Class 501.—*White Orpington Pullets*. [5 entries.]

- 570 I. & 566 III.—J. WARREN, Cross Tree, Marnhull, Dorset.
- 567 II.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
- 563 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
- H. C.—569.

## Class 502.—*Black Orpington Cocks*. [17 entries.]

- 580 I.—C. E. WOODWARD, Clipstone Colliery, Edwinstowe, Newark.
- 572 II.—N. M. AGNEW, Oversley, Morley, Wilmslow, Cheshire.
- 585 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
- 581 R. N.—W. J. CHILD, Fernbank, St. Ives, Ringwood, Hants.
- H. C.—578. C.—575.

## Class 503.—*Black Orpington Hens*. [11 entries.]

- 590 I.—F. SWINDELLS, Crossley Stud Farm, Buglawton, Cheshire.
- 593 II.—C. E. WOODWARD, Clipstone Colliery, Edwinstowe, Newark.
- 587 III.—D. REID, Firthview, Fortgordon, Banffshire.
- 589 R. N.—N. M. AGNEW, Oversley, Morley, Wilmslow, Cheshire.
- H. C.—595. C.—594.

<sup>1</sup> Piece of Plate, value £3 3s., given by the Buff Orpington Club for the best Buff Orpington in Classes 494-497.

<sup>2</sup> Special Prize given by the White Orpington Club for the best Cock or Hen in Classes 498 and 499.

<sup>3</sup> Special Prize given by the White Orpington Club for the best Cockerel or Pullet in Classes 500 and 501.

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**Class 504.—Black Orpington Cockerels.** [7 entries.]

- 604 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 599 II.—S. R. HOOPER, Cuddra House, Par Station, Cornwall.  
 601 III.—D. REID, Firthview, Portgordon, Banffshire.  
 600 E. N.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.

**Class 505.—Black Orpington Pullets.** [6 entries.]

- 606 I. & 609 E. N.—D. REID, Firthview, Portgordon, Banffshire.  
 607 II.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.  
 605 III.—W. H. COOK, LTD., Cooks Poultry Farm, Orpington, Kent.  
 H. C.—610.

**Class 506.—Blue Orpington Cocks or Cockerels.** [9 entries.]

- 614 I.—MRS. A. LATHAM, Model Poultry Farm, Frimley Green, Surrey.  
 617 II., 613 III., & 615 E. N.—ROBERT L. MOND, Combe Bank, Sevenoaks.  
 H. C.—618. C.—611.

**Class 507.—Blue Orpington Hens or Pullets.** [10 entries.]

- 620 I.—ROBERT L. MOND, Combe Bank, Sevenoaks.  
 622 II.—MRS. A. LATHAM, Model Poultry Farm, Frimley Green, Surrey.  
 625 III.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Rending.  
 H. C.—620. C.—621.

**Class 508.—British Rhode Island Red Single Comb or Rose Comb Cocks.**  
 [30 entries.]

- 636 I. & Special.<sup>1</sup>—A. J. JONES, Oldbury Grange, Bridgnorth.  
 647 II.—W. R. ARBBY, Croft Farm, Hessay, York.  
 641 III.—J. TRUMAN, The Red Farm, Woodhouse, Sheffield.  
 640 E. N.—MISS K. S. MASON, Timbersbrook House, Congleton.  
 H. C.—643, 652. C.—633.

**Class 509.—British Rhode Island Red Single Comb or Rose Comb Hens.**  
 [21 entries.]

- 677 I. & E. N. for Special.<sup>1</sup>—W. R. SMITH, Copley House, Pattingham, Wolverhampton.  
 675 II.—A. T. BROCKLEHURST, 30 Meadowcroft Road, Palmers Green, London, N.  
 680 III.—MRS. A. J. MOORE, Eight Oaks, Chelford Road, Knutsford, Cheshire.  
 665 E. N.—MISS K. S. MASON, Timberbrook House, Congleton.  
 H. C.—680, 668, 676. C.—667, 674.

**Class 510.—British Rhode Island Red Single Comb Cockerels.** [20 entries.]

- 699 I. & Special.<sup>2</sup>—N. A. AXE, Hand Dale Farm, Hartington, Buxton.  
 682 II.—W. R. ARBBY, Croft Farm, Hessay, York.  
 685 III.—W. G. STEBBINGS, Salwick, Preston.  
 683 E. N.—A. J. JONES, Oldbury Grange, Bridgnorth.  
 H. C.—681.

**Class 511.—British Rhode Island Red Single Comb Pullets.** [34 entries.]

- 723 I. & Special.<sup>1</sup>—T. HODGSON & SON, Redsholme Farm, Cothens, one.  
 723 II.—DYSON & SON, Holly Bank, Brockholes, near Huddersfield.  
 729 III.—MRS. A. J. MOORE, Eight Oaks, Chelford Road, Knutsford, Cheshire.  
 708 E. N.—MISS K. S. MASON, Timbersbrook House, Congleton.  
 H. C.—710, 716. C.—704.

**Class 512.—British Rhode Island Red Rose Comb Cockerels.** [8 entries.]

- 740 I. & E. N. for Special.<sup>3</sup>—A. J. SPIRES, 129 Besent Road, Luton.  
 745 II. & 738 III.—GEORGE SCOTT, Windmill Poultry Farm, Pudsey, Yorks.

**Class 513.—British Rhode Island Red Rose Comb Pullets.** [8 entries.]

- 749 I. & E. N. for Special.<sup>3</sup>—MISS F. CHAMPTON, Heather Hall, Leicester.  
 747 II. & 750 E. N.—GEORGE SCOTT, Windmill Poultry Farm, Pudsey, Yorks.  
 746 III.—TOM A. SCOTT & CO., The Trenches, Slough.

\* **Class 514.—Russian Orloff Cocks or Cockerels.** [5 entries.]

- 754 I. & 751 II.—MRS. CHRISTINE COLBECK, Boyle Hall, near Wakefield.

<sup>1</sup> Special Prize given by the British Rhode Island Red Club for the best Cock or Hen in Classes 508 and 509.

<sup>2</sup> Special Prize given by the British Rhode Island Red Club for the best Cockerel in Classes 510 and 512.

<sup>3</sup> Special Prize given by the British Rhode Island Red Club for the best Pullet in Classes 511 and 513.

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## Class 515.—Russian Orloff Hens or Pullets. [4 entries.]

- 756 I. & 750 III.—MRS. CHRISTINE COLBROCK, Boyle Hall, near Wakefield.  
758 II.—MRS. A. SHERSTON, Otley Hall, Ipswich.

## Class 516.—Old English Game Black-Red Cocks or Cockerels. [21 entries.]

- 799 I.—W. & J. H. HEYS, Loftwich, Heyes, Davenham, Northwich.  
757 II.—J. OLIVER, Threepwood Farm, Haydon Bridge.  
793 III.—H. STALKER, The Beck, Brampton Junction, Carlisle.  
765 R. N.—ARTHUR BROWN, Heighington co. Durham.  
H. C.—761, 770, 772, 778. C.—764, 775.

## Class 517.—Old English Game Clay or Wheaton Hens or Pullets.

[17 entries.]

- 795 I.—MRS. T. T. ROBINSON, Grey Coats Inn, Baggrove, Cumberland.  
781 II.—TOM WOODCOCK, Burton Fen, Lincoln.  
786 III.—ARTHUR BROWN, Heighington, Co. Durham.  
792 R. N.—JOHN WATSON, Eden Mount, Kendal.  
H. C.—782, 787, 788, 789, 791. C.—785, 784, 785, 796.

## Class 518.—Old English Game Cocks or Cockerels, any other colour.

[24 entries.]

- 801 I.—ARTHUR BROWN, Heighington, Co. Durham.  
798 II.—W. TELFORD, Breconside, Brampton Junction, Carlisle.  
813 III.—G. WOOD, Talkin, Brampton Junction, Carlisle.  
824 R. N.—J. T. DODD, Riecarton, Newcastle-on-Tyne.  
H. C.—801, 806, 815, 818, 819. C.—802, 803, 807, 810.

## Class 519.—Old English Game Hens or Pullets, any other colour. [15 entries.]

- 836 I. & 834 III.—JOHN WATSON, Eden Mount, Kendal.  
831 II.—MRS. T. T. ROBINSON, Grey Coats Inn, Baggrove, Cumberland.  
826 R. N.—ARTHUR BROWN, Heighington, Co. Durham.  
H. C.—822, 823, 827, 832, 833. C.—824, 829, 830, 835.

## Class 520.—Indian Game Cocks or Cockerels. [7 entries.]

- 843 I. & 837 III.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
838 II.—F. C. TUCKER, Bowden Hall Farm, Upton St. Leonard's, Gloucester.  
840 R. N.—E. SAUNDERS, 8 Camilla Street, Gateshead-on-Tyne.  
H. C.—839, 842, 843a.

## Class 521.—Indian Game Hens or Pullets. [10 entries.]

- 844 I.—W. & J. H. HEYS, Loftwich, Heyes, Davenham, Northwich.  
853 II. & 851 III.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
846 R. N.—F. C. TUCKER, Bowden Hall Farm, Upton St. Leonard's, Gloucester.  
H. C.—845, 848, 849, 850.

## Class 522.—Modern Game Cocks or Cockerels, any colour. [5 entries.]

- 858 I.—C. SNEDDON, Kirkham, Lancs.  
851 II.—E. H. PORTER, 35 Browney Lane, Browney, Co. Durham.  
855 III.—J. GREENFIELD & SON, White Mill, Aberystwyll, Carmarthen.  
857 R. N.—CAPTAIN T. M. WHITTAKER, Hendre, Penrhyneddraeth, North Wales.

## Class 523.—Modern Game Hens or Pullets, any colour. [3 entries.]

- 861 I.—CAPTAIN T. M. WHITTAKER, Hendre, Penrhyneddraeth, North Wales.  
860 II.—H. HOWARD, Greycoat House, Harrowden, Beds.

## Class 524.—Black Sumatra Game Cocks or Cockerels. [3 entries.]

- 862 I. & 864 III.—W. T. W. ROYDEN, Flegg Burgh, Norfolk.  
863 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.

## Class 525.—Black Sumatra Game Hens or Pullets. [4 entries.]

- 866 I. & 868 III.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.  
865 II. & 867 R. N.—W. T. W. ROYDEN, Flegg Burgh, Norfolk.

## Class 526.—Minorca Cocks or Cockerels. [10 entries.]

- 876 I. & 878 R. N.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
873 II.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
874 III.—FURLAND BROS., Briggwater, Somerset.  
H. C.—870, 875.

## Class 527.—Minorca Hens or Pullets. [15 entries.]

- 891 I. & 893 R. N.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
887 II. & 889 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
H. C.—882, 888, 892.



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**Class 528.—White Leghorn Cocks or Cockerels.** [13 entries.]

- 895 I.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
902 II. & 905 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
900 E. N.—H. P. DOUGLAS, The Woodlands, Crook, S.O., Co. Durham.  
H.C.—899, 901.

**Class 529.—White Leghorn Hens or Pullets.** [22 entries.]

- 923 I.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
912 II.—P. SKEY, 12 Maesemelyn Street, Grose Wen, Tisbury, Port Talbot.  
921 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
928 E. N.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edghaston Park Road Birmingham.  
H.C.—916, 918, 919.

**Class 530.—Brown Leghorn Cocks or Cockerels.** [10 entries.]

- 930 I., 934 II., & 937 E. N.—JOHN JONES, Poultry Farm, Crymmych.  
933 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.  
H.C.—938.

**Class 531.—Brown Leghorn Hens or Pullets.** [14 entries.]

- 944 I.—E. DENYER, 93 Walton Road, East Molesey, Surrey.  
943 II.—R. McMILLAN, Forty Acre Poultry Farm, Witch Road, Kilmarnock.  
945 III.—J. W. PEACOCK, Holm Hill, Chester Moor, Chester-le-Street.  
942 E. N.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edghaston Park Road Birmingham.  
H. C.—946, 951, 952.

**Class 532.—Black Leghorn Cocks or Cockerels.** [8 entries.]

- 953 I.—WALTER HURST, South Terrace, Glossop.  
956 II.—C. G. BLACKADDER, Angel Cottage, Castle Douglas.  
950 III.—W. WOODMASS, Howard House, Gilsland, Carlisle.  
955 E. N.—W. SOUTHWELL, 8 Tiltotson Street, Silsden, Yorks.  
H. C.—954. C.—955.

**Class 533.—Black Leghorn Hens or Pullets.** [7 entries.]

- 964 I.—JOHN BOWER, "The Bungalow," Peak Forest.  
963 II.—WALTER HURST, South Terrace, Glossop.  
965 III.—H. S. KING, Gallow House, Otley, Yorks.  
967 E. N.—E. WHITAKER, Carrs Farm, Hebden Bridge.  
H. C.—961, 962.

**Class 534.—Blue Leghorn Cocks or Cockerels.** [4 entries.]

- 970 I. & Special<sup>1</sup> & 968 E. N.—F. MITTON, 23 Bolton Road, Edgworth, West Bolton.  
971 II.—S. T. ASHTON, 87 Hall Street, Glossop.  
969 III.—C. N. ALEXANDER, Stockwell House, Knaresborough.

**Class 535.—Blue Leghorn Hens or Pullets.** [8 entries.]

- 975 I. & E. N. for Special<sup>1</sup>—S. T. ASHTON, 37 Hall Street, Glossop.  
976 II. & 973 III.—C. N. ALEXANDER, Stockwell House, Knaresborough.  
974 E. N.—F. MITTON, 23 Bolton Road, Edgworth, West Bolton.

**Class 536.—Leghorn Cocks or Cockerels, any other colour.** [6 entries.]

- 980 I. & 984 II.—R. HELME, Thurnham, near Lancaster.  
985 III.—F. E. DERHAM, Gables Poultry Farm, Doveridge, Derbyshire.

**Class 537.—Leghorn Hens or Pullets, any other colour.** [5 entries.]

- 986 I.—A. R. FISH, Holme Mead, Hutton, Preston.  
980 II.—P. G. EDWARDS, 2 West Street, Penbroke, South Wales.  
987 III.—L. W. ADAMS, Red Barns Farm, Pateham, Hants.  
988 E. N.—R. HELME, Thurnham, near Lancaster.

**Class 538.—Sicilian Buttercup Cocks or Cockerels.** [14 entries.]

- 998 I.—MRS. C. COLBECK, Boyle Hall, near Wakefield.  
1002 II.—R. TERROT, Winstington House, Cuckham, Berks.  
1004 III.—W. B. HURTON, Linden Avenue, Great Ayton, Yorks.  
1000 E. N.—TOM A. SCOTT & CO., The Trenches, Slough.  
H. C.—997. C.—997.

**Class 539.—Sicilian Buttercup Hens or Pullets.** [12 entries.]

- 1007 I. & 1010 III.—MRS. C. COLBECK, Boyle Hall, near Wakefield.  
1005 II.—J. PARNABY, Wragby, near Wakefield.  
1013 E. N.—P. A. BALL, Lower Poultry Farm, Doveridge, Derbyshire.  
H. C.—1008. C.—1011.

<sup>1</sup> Special Prize given by the Blue Leghorn Club for the best Blue Leghorn in Classes 534 and 535.

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### Class 540.—Barred Plymouth Rock Cocks. [12 entries.]

- 1020 I. & Special.<sup>1</sup>—MRS. K. J. WROUGHTON, Lynbrook Farm, Northallerton.  
 1017 II. & 1027 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 1024 E. N.—J. HARRIS, 1 Laurel Cottages, St. Martins, Oswestry.  
 H. C.—1019, 1023, 1026. C.—1013, 1026.

### Class 541.—Barred Plymouth Rock Hens. [7 entries.]

- 1028 I. & E. N. for Special<sup>1</sup> & 1032 II.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 1031 III.—MRS. DREW, Plas Wilmot, Oswestry, Salop.  
 1030 E. N.—S. LAKE, Hayesden, Tonbridge, Kent.  
 C.—1029.

### Class 542.—Barred Plymouth Rock Cockerels. [11 entries.]

- 1045 I., Special<sup>2</sup>, Special<sup>3</sup> & 1037 II.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 1041 III.—W. R. WILLIAMS, Carnforth, Lancs.  
 1036 E. N.—R. GARLICK, Kirkby Lonsdale, Westmorland.  
 H. C.—1038, 1038.

### Class 543.—Barred Plymouth Rock Pullets. [14 entries.]

- 1049 I., E. N. for Special<sup>2</sup> & 1059 II.—DR. E. S. JACKSON, Carnforth.  
 1046 III.—R. GARLICK, Kirkby Lonsdale, Westmorland.  
 1052 E. N.—G. A. JACKSON, Summerville, Caton, Lancaster.  
 H. C.—1048, 1050, 1057. C.—1047.

### Class 544.—Buff Plymouth Rock Cocks or Cockerels. [11 entries.]

- 1060 I. Special<sup>3</sup>, Special<sup>4</sup> & 1067 II.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 1063 III.—E. STEPHENS, Tymmen Poultry Farm, Cwmavon, Port Talbot.  
 1064 E. N.—W. D. MATCOCK, 307 St. Benedicts Road, Small Heath.  
 H. C.—1061, 1066. C.—1068.

### Class 545.—Buff Plymouth Rock Hens or Pullets. [6 entries.]

- 1071 I., E. N. for Special<sup>3</sup> & 1074 E. N.—DR. E. S. JACKSON, Carnforth.  
 1075 II.—H. SPENSLEY, Oaks Farm, Menston, via Leeds.  
 1073 III.—H. R. ROTHON, Joseph Villa, Chapel Road, Tiptree, Essex.

### Class 546.—Plymouth Rock Cocks or Cockerels, any other colour. [7 entries.]

- 1079 I. & Special<sup>4</sup> 1082 & E. N.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
 1077 II.—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.  
 1081 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth.  
 H. C.—1080, 1083.

### Class 547.—Plymouth Rock Hens or Pullets, any other colour. [6 entries.]

- 1089 I. & E. N. for Special<sup>4</sup>—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton.  
 1084 II. & 1068 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.  
 1086 E. N.—A. C. MARFIT, Orchard Rookeries, Pickering, Yorks.

### Class 548.—Scots Dumpy Cocks or Cockerels. [4 entries.]

- 1091 I. & Special<sup>7</sup> & 1093 II.—ARTHUR J. MAJOR, Ditton, Langley, Bucks.  
 1090 III. & 1092 E. N.—J. E. KERR, Harviestoun Castle, Dollar.

### Class 549.—Scots Dumpy Hens or Pullets. [4 entries.]

- 1095 I., E. N. for Special<sup>7</sup> & 1097 II.—ARTHUR J. MAJOR, Ditton, Langley, Bucks.  
 1094 III., & 1096 E. N.—J. E. KERR, Harviestoun Castle, Dollar.

### Class 550.—Ancona Cocks or Cockerels. [14 entries.]

- 1108 I.—E. WHITAKER, Carrs Farm, Hebden Bridge.  
 1101 II.—T. WILLIAMS, Church House, Manordilo, South Wales.  
 1103 III.—JOHN JONES, Pontricleyn, 26 Woods Row, Carmarthen.  
 1105 E. N.—R. W. TUNSTALL, Aysgarth, Yorks.  
 H. C.—1098, 1099, 1106, 1110. C.—1100.

<sup>1</sup> Special Prize of 10s. given by the Plymouth Rock Society for the best Barred Cock or Hen in Classes 540 and 541.

<sup>2</sup> Special Prize of 10s. given by the Plymouth Rock Society for the best Barred Cockerel or Pullet in Classes 542 and 543.

<sup>3</sup> Special Prize of 10s. given by the Plymouth Rock Society for the best Buff in Classes 544 and 545.

<sup>4</sup> Special Prize of 10s. given by the Plymouth Rock Society for the best any other colour in Classes 546 and 547.

<sup>5</sup> Special Prize given by the Barred Plymouth Rock Club for the best Barred in Classes 540-543.

<sup>6</sup> Special Prize given by the Buff Plymouth Rock Club for the best Buff in Classes 544 and 545.

<sup>7</sup> Special Prize of 10s. 6d. given by the Scots Dumpy Club for the best Scots Dumpy in Classes 548 and 549.

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**Class 551.—*Ancona Hens or Pullets.*** [19 entries.]

- 1114 I.—T. B. ISHERWOOD, Clarence Poultry Farm, Helmschore, Manchester.  
 1120 II.—T. WILLIAMS, Church House, Mangrdilo, South Wales.  
 1118 III.—H. HARTLEY, Seghole Farm, Trawden, Calia, Lancs.  
 1112 E. N.—J. H. FULLER, Houghton Lane Farm, Flaxmoss, Helmschore, Lancs.  
 H. C.—1113, 1116, 1117, 1119, 1121, 1122, 1123, 1129, 1130. C.—1124.

**Class 552.—*Yokohama Cocks or Cockerels.*** [3 entries.]

- 1131 I. & Silver Medal.—MRS. L. C. PRIDEAUX, Lindfield, Haywards Heath, Sussex.  
 1133 II.—R. SCOTT MILLER, Clydenek, Uddington, Glasgow.  
 1132 III.—ROBERT L. MOND, Combe Bank, Sevenoaks.

**Class 553.—*Yokohama Hens or Pullets.*** [4 entries.]

- 1134 I.—MRS. L. C. PRIDEAUX, Lindfield, Haywards Heath, Sussex.  
 1136 II.—ROBERT L. MOND, Combe Bank, Sevenoaks.

**Class 554.—*Cocks or Cockerels, any other distinct variety.*** [13 entries.]

- 1148 I.—H. MCFARLAND, Holbeck Hill, Wolsingham, Co. Durham.  
 1139 II.—HARRY FORTUNE, Banklands, Silsden, near Keighley.  
 1140 III.—C. J. SECKER, Market Hill Works, Dereham.  
 1150 E. N.—R. P. WHRADON, Ilminster, Somerset.  
 H. C.—1140, 1141, 1144, 1147, 1149.

**Class 555.—*Hens or Pullets, any other distinct variety.*** [17 entries.]

- 1161 I.—TOM H. FURNESS, Carlton House, Chesterfield.  
 1159 II.—MRS. J. EDWARDS, Railway Hotel, Llandilo, South Wales.  
 1161 III.—HARRY FORTUNE, Banklands, Silsden, near Keighley.  
 1166 E. N.—W. PICKERING, 19 East Gate, Pickering, Yorks.  
 H. C.—1152, 1156, 1156, 1158, 1160, 1162, 1163, 1164, 1167.

**Ducks.**

**Class 556.—*Aylesbury Drakes or Ducks, bred prior to 1920.*** [4 entries.]

- 1170 I. & 1168 II.—J. HUNTLEY & SON, Hinsel Poultry Farm, Coldstream.  
 1169 III. & 1171 E. N.—J. Y. WHEATLEY, Saxton, Tadcaster.

**Class 557.—*Aylesbury Drakes or Ducks, bred in 1920.*** [7 entries.]

- 1175 I. & 1172 III.—J. HUNTLEY & SON, Hinsel Poultry Farm, Coldstream.  
 1173 II.—J. LONGSON & SONS, Buxton Road, Chapel-en-le-Frith, Derbyshire.  
 1174 E. N.—J. Y. WHEATLEY, Saxton, Tadcaster.  
 H. C.—1173, 1177, 1178.

**Class 558.—*Rouen Drakes or Ducks, bred prior to 1920.*** [11 entries.]

- 1183 I.—RALPH ALTY, Buckshaw Hall, Buxton, Chorley.  
 1188 II.—MAJOR I. A. MORRISON, D.S.O., Baxillon Park, Reading.  
 1186 III. & 1185 E. N.—MASTER A. E. BREWIN, Llysmeirion, Trefnant, R.S.O.  
 H. C.—1179, 1181, 1182. C.—1180.

**Class 559.—*Rouen Drakes or Ducks, bred in 1920.*** [5 entries.]

- 1191 I.—RALPH ALTY, Buckshaw Hall, Buxton, Chorley.  
 1190 II. & 1192 III.—F. W. MYHILL, The Red House, Hethel, Norwich.  
 1194 E. N.—J. S. HEPBURN, Astley, Nuneaton.

**Class 560.—*White Indian Runner Drakes or Ducks, bred in 1920.*** [8 entries.]

- 1195 I. & 1197 III.—REV. J. WILSON, Armathwaite, Carlisle.  
 1198 II.—MRS. W. STODDART, Kirkbride House, Kirkbride, Carlisle.  
 1201 E. N.—W. G. KINGWILL, Dartmoor Poultry Farm, South Brent, Devon.  
 H. C.—1196, 1200, 1202.

**Class 561.—*Fawn Indian Runner Drakes, bred in 1920.*** [7 entries.]

- 1206 I., 1208 II., 1204 III. & 1209 E. N.—REV. J. WILSON, Armathwaite, Carlisle.  
 H. C.—1203, 1205.

**Class 562.—*Fawn Indian Runner Ducks, bred in 1920.*** [9 entries.]

- 1211 I., 1215 II., 1213 III. & 1217 E. N.—REV. J. WILSON, Armathwaite, Carlisle.  
 H. C.—1210, 1212, 1214, 1218.

**Class 563.—*Drakes or Ducks, any other colour, bred in 1920.*** [9 entries.]

- 1223 I., 1225 II., & 1227 III.—REV. J. WILSON, Armathwaite, Carlisle.  
 1219 E. N.—E. HON. H. FRANK FRANK, Merrow Croft, Guildford.  
 H. C.—1221, 1222, 1224. C.—1226.

<sup>1</sup> Silver Medal given by the Yokohama Club for the best Yokohama in Classes 552 and 553.

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### Class 564.—*Drakes or Ducks, any other colour, bred prior to 1920.* [14 entries.]

- 1241 I. & 1239 E. N.—REV. J. WILSON, Armathwaite, Carlisle.  
 1233 II.—RT. HON. H. PIKE PEASE, M.P., Merrow Croft, Guildford.  
 1240 III.—ABBOT BROS., Thuxton, Norfolk.  
 H. C.—1228, 1231, 1234, 1.35. O.—1230, 1237.

### Class 565.—*Crested Drakes or Ducks, any colour.* [3 entries.]

- 1242 I.—H. SCOTT MILLER, Clydenck, Uddingstone, Glasgow.

### Class 566.—*Drakes or Ducks, any other variety, bred prior to 1920.* [14 entries.]

- 1248 I. & 1251 III.—J. HUNTLEY & SON, Hirsell Poultry Farm, Coldstream.  
 1246 II.—R. S. WILLIAMSON, The Grange, Hednesford.  
 1252 E. N.—W. D. TRICERTT, Lench House, Waterfoot, Manchester.  
 H. C.—1243, 12.9, 1253, 1254, 1256.

### Class 567.—*Drakes or Ducks, any other variety, bred in 1920.* [6 entries.]

- 1259 I., 1262 II. & 1264 III.—J. HUNTLEY & SON, Hirsell Poultry Farm, Coldstream.  
 1260 E. N.—W. G. KINGWELL, Dartmoor Poultry Farm, South Brent, Devon.  
 H. C.—1263.

## Geese.

### Class 568.—*Emden Ganders.* [6 entries.]

- 1268 I.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
 1266 II.—ABBOT BROS., Thuxton, Norfolk.  
 1265 III.—LADY HARLECH, Brogyntyn, Oswestry.  
 1270 E. N.—A. H. FOX-BROCKBANK, The Croft, Kirksanton, Silcroft, Cumberland.  
 H. C.—1267.

### Class 569.—*Emden Geese.* [3 entries.]

- 1272 I.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
 1273 II.—A. H. FOX-BROCKBANK, The Croft, Kirksanton, Silcroft, Cumberland.  
 1271 III.—ABBOT BROS., Thuxton, Norfolk.

### Class 570.—*Toulouse Ganders.* [2 entries.]

- 1275 I.—J. S. HEPBURN, Astley, Nuneaton.  
 1274 II.—J. Y. WHARTLEY, Saxton, Tadcaster.

### Class 571.—*Toulouse Geese.* [1 entry.]

- 1276 I.—J. S. HEPBURN, Astley, Nuneaton.

## Turkeys.

### Class 572.—*White Turkey Cocks or Cockerels.* [7 entries.]

- 1279 I.—MRS. F. NAGLE, Pamber Place, Charter Ley, Basingstoke.  
 1278 II.—Miss S. M. CORRETT, Stableford, Bridgnorth, Salop.  
 1280 III.—MISSSES RANSFORD, Perseverance Poultry Farm, Pensford, Bristol.  
 1283 E. N.—ABBOT BROS., Thuxton, Norfolk.  
 H. C.—1277.

### Class 573.—*White Turkey Hens or Pullets.* [5 entries.]

- 1285 I.—MISSSES RANSFORD, Perseverance Poultry Farm, Pensford, Bristol.  
 1287 II.—W. CAINES, Ford Manor Dairy Farm, Lingfield, Surrey.  
 1288 III.—MRS. C. I. EVANS, Court of Noke, Pembroke, Herefordshire.

### Class 574.—*Turkey Cocks, any other variety.* [3 entries.]

- 1289 I.—ABBOT BROS., Thuxton, Norfolk.

### Class 575.—*Turkey Hens, any other variety.* [3 entries.]

- 1293 I.—ABBOT BROS., Thuxton, Norfolk.  
 1292 II.—MRS. C. LAING, Glendale, Haltwhistle.

## Bantams.

### Class 576.—*Sabright Bantam Cocks or Cockerels.* [5 entries.]

- 1299 I.—A. R. FISH, Holme Moss, Hutton, Preston.  
 1297 II.—W. & J. H. HEYS, Lettwich, Heyes, Davenham, Northwich.  
 1285 III.—J. F. ENTWISLE, Crigglestone, Manor Farm, near Wakesfield.  
 1298 E. N.—T. H. EGGLESTONE, St. John's Chapel, Co. Durham.  
 H. C.—1296.

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**Class 577.—Sebright Bantam Hens or Pullets.** [5 entries.]

- 1300 I.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.  
 1304 II.—A. R. FISH, Holme Mead, Hutton, Preston.  
 1303 III.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1301 E. N.—W. RICHARDSON, 13 Bootham Crescent, York.

**Class 578.—Wyandotte Bantam Cocks or Cockerels.** [8 entries.]

- 1310 I.—E. WHITAKER, Carra Farm, Hebden Bridge.  
 1311 II.—F. SMITH, West End Villa, Pinxton, Nottingham.  
 1305 III.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1312 E. N.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.  
 H. C.—1303. C.—1306.

**Class 579.—Wyandotte Bantam Hens or Pullets.** [11 entries.]

- 1313 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1318 II.—F. ROBINSON, Hoyland Common, West Barnsley.  
 1321 III.—E. WHITAKER, Carra Farm, Hebden Bridge.  
 1319 E. N.—A. D. RIDGWAY, Ivy Lodge, Mirfield, Yorks.  
 H. C.—1320. C.—1322.

**Class 580.—Scotch Grey Bantam Cocks or Cockerels.** [6 entries.]

- 1326 I., & 1329 E. N.—J. D. JOHNSTON, "Norwood," Albert Avenue, Sedgley Park, Prestwich, Lancs.  
 1325 II., & 1328 III.—J. MCCRAE, 13 Thomson Street, Kilmarnock, Ayrshire.  
 H. C.—1327.

**Class 581.—Scotch Grey Bantam Hens or Pullets.** [6 entries.]

- 1331 I., & 1334 II.—J. D. JOHNSTON, "Norwood," Albert Avenue, Sedgley Park, Prestwich, Lancs.  
 1330 III., & 1333 E. N.—J. MCCRAE, 13 Thomson Street, Kilmarnock, Ayrshire.  
 H. C.—1332.

**Class 582.—Old English Game Bantam Cocks or Cockerels.** [18 entries.]

- 1341 I.—J. DAWSON, Bashall Hall, near Clitheroe, Lancs.  
 1338 II.—MISS J. ASHWORTH, Queen's Place, Summerseat.  
 1350 III.—I. NICHOLSON, Cater House Farm, Framwellgate Moor, Co. Durham.  
 1346 E. N.—MRS. T. T. ROBINSON, Grey Cuts Inn, Bagrow, Cumberland.  
 H. C.—1336, 1337, 1338, 1347, 1349. C.—1340, 1344, 1348.

**Class 583.—Old English Game Bantam Hens or Pullets.** [21 entries.]

- 1354 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1358 II.—J. DAWSON, Bashall Hall, near Clitheroe, Lancs.  
 1347 III.—I. NICHOLSON, Cater House Farm, Framwellgate Moor, Co. Durham.  
 1374 E. N.—A. H. BROWNSON, 49 Church Street, Nuneaton, Warwickshire.  
 H. C.—1356, 1362, 1365, 1368, 1372. C.—1360, 1368, 1371, 1373.

**Class 584.—Modern Game Bantam Cocks or Cockerels, any colour.** [7 entries.]

- 1377 I.—C. SNEDDON, Kirkham, Lancs.  
 1380 II.—W. D. TRICKETT, Lench House, Waterfoot, Manchester.  
 1378 III.—T. H. STRETCH, Vine Cottage, Ormskirk.  
 1375 E. N.—A. R. FISH, Holme Mead, Hutton, Preston.  
 H. C.—1370, 1379, 1381.

**Class 585.—Modern Game Bantam Hens or Pullets, any colour.** [9 entries.]

- 1385 I.—C. SNEDDON, Kirkham, Lancs.  
 1382 II.—T. H. STRETCH, Vine Cottage, Ormskirk.  
 1383 III.—W. D. TRICKETT, Lench House, Waterfoot, Manchester.  
 1384 E. N.—W. VART, 32 Mint Street, Kendal.  
 H. C.—1386, 1387, 1388, 1389, 1390.

**Class 586.—Black or White Rosecomb Bantam Cocks or Cockerels.** [2 entries.]

- 1382 I.—A. R. FISH, Holme Mead, Hutton, Preston.  
 1391 II.—R. FLETCHER HEARNshaw, Fox Hill, Burton Joyce, Notts.

**Class 587.—Black or White Rosecomb Bantam Hens or Pullets.** [4 entries.]

- 1396 I.—A. R. FISH, Holme Mead, Hutton, Preston.  
 1394 II.—A. HARLAND, 146 Humble Lane, Wingate, Durham.  
 1393 III.—R. FLETCHER HEARNshaw, Fox Hill, Burton Joyce, Notts.

**Class 588.—Barbu d'Anvers Cocks or Cockerels.** [7 entries.]

- 1398 I., & 1402 E. N.—MRS. E. F. HURT, The Old Mill, South Darley, Matlock.  
 1397 II., & 1403 III.—R. TERROT, Wispington House, Cookehams, Berks.  
 H. C.—1399. C.—1401.

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- Class 589.**—*Barbu d'Anvers Hens or Pullets.* [7 entries.]  
 1406 I.—J. G. PRESTON, Bay House, Ellal, Lancaster.  
 1410 II.—MRS. TERROT, Wislington House, Cookham, Berks.  
 1404 III.—MRS. E. F. HURT, The Old Mill, South Darley, Matlock.  
 1408 R. N.—R. TERROT, Wislington House, Cookham, Berks.  
 H. C.—1406. C.—1405.
- Class 590.**—*Barbu d'Uccle Cocks or Cockerels.* [3 entries.]  
 1411 I., & 1413 II.—K. WARD, Tweed Villa, Haxby, York.
- Class 591.**—*Barbu d'Uccle Hens or Pullets.* [4 entries.]  
 1416 I., 1417 II., & 1414 III.—K. WARD, Tweed Villa, Haxby, York.
- Class 592.**—*Cochin or Pekin Bantam Cocks or Cockerels.* [9 entries.]  
 1419 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1418 II.—R. S. WILLIAMSON, The Grange, Hednesford.  
 1420 III.—A. HENSHAW, Norman Road, Ripley, Derbyshire.  
 1425 R. N.—GEORGE R. PROCTER, O.B.E., Flass House, Durham.  
 H. C.—1422. C.—1421.
- Class 593.**—*Cochin or Pekin Bantam Hens or Pullets.* [11 entries.]  
 1427 I.—R. S. WILLIAMSON, The Grange, Hednesford.  
 1429 II.—A. HENSHAW, Norman Road, Ripley, Derbyshire.  
 1436 III.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.  
 1428 R. N.—J. R. MARSHALL, Manor Terrace, Ferry Hill Village, Co. Durham.  
 H. C.—1434. C.—1432.
- Class 594.**—*Yokohama Bantam Cocks or Cockerels.* [3 entries.]  
 1439 I., & Silver Medal, 1438 II., & 1440 III.—F. J. S. CHATTERTON, 34 Elm Park Road, Finchley, London, N.
- Class 595.**—*Yokohama Bantam Hens or Pullets.* [3 entries.]  
 1441 I. & R. N. for Silver Medal, 1442 II., & 1443 III.—F. J. S. CHATTERTON, 34 Elm Park Road, Finchley, London, N.
- Class 596.**—*Japanese Bantam Cocks or Cockerels.* [4 entries.]  
 1445 I.—MRS. SMITH, Altadone, Preston.  
 1447 II., 1444 III., & 1446 R. N.—MAJOR G. T. WILLIAMS, Tredrea, Perranwell, Cornwall.
- Class 597.**—*Japanese Bantam Hens or Pullets.* [5 entries.]  
 1448 I., 1453 II., & 1450 III.—MAJOR G. T. WILLIAMS, Tredrea, Perranwell, Cornwall.
- Class 598.**—*Bantam Cocks or Cockerels, any other variety.* [9 entries.]  
 1459 I.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
 1455 II.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1460 III.—H. MCFARLANE, Holbeck Hill, Wolsingham, Co. Durham.  
 1461 R. N.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.  
 H. C.—1454. C.—1456.
- Class 599.**—*Bantam Hens or Pullets, any other variety.* [10 entries.]  
 1462 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.  
 1470 II.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.  
 1471 III.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.  
 1463 R. N.—M. DAVID, St. Donats, Llantwit Major, Glam.  
 H. C.—1465, 1466.

## RABBITS. Belgian Hares.<sup>2</sup>

- Class 600.**—*Belgian Hare Adult Bucks.* [10 entries.]  
 7 I. (30s. & R. N. for Champion.)—MRS. S. E. WILLE, 33 High Street, Fareham Hants  
 9 II. (20s.)—J. MUSGROVE, 8 Renwick Terrace, Bensham, Gateshead.  
 2 III. (10s.)—J. WATERS, Tredwell Farm, Bickley Kent.  
 6 IV. (7s. 6d.)—MRS. J. L. APPLETON, Molescroft, Beverley.  
 3 R. N.—W. H. BETTS, Spinney Road, Irthlingborough, Northants.  
 H. C.—1, 10. C.—5.
- <sup>1</sup> Silver Medal given by the Yokohama Club for the best Yokohama Bantam in Classes 594 and 595.  
<sup>2</sup> Fourth Prizes given by the National Belgian Hare Club.  
<sup>3</sup> The Newbury Challenge Trophy given by the National Belgian Hare Club for the best Belgian Hare in Classes 600-606.

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*Class 601.—Belgian Hare Adult Does. [11 entries.]*

- 15 I. (30s.) & Champion.\*) & 11 II. (20s.)—J. WATERS, Tredwell Farm, Bickley, Kent.  
20 III. (10s.)—J. BARAGWANATH, The Maples, 88 Alcester Road, Moseley, Birmingham.  
19 IV. (7s. 6d.)—J. MUSGROVE, 3 Renwick Terrace, Bensham, Gateshead.  
18 R. N.—W. EXELBY, 97 Poppleton Road, York.  
H. C.—12, 16.      C.—14.

*Class 602.—Belgian Hare Bucks, under six months. [12 entries.]*

- 33 I. (30s.)—F. FINDALL, 26 Vyner Street, Haxby Road, York.  
23 II. (20s.)—A. WORSFALL, 27 Montague Road, Clarendon Park, Leicester.  
29 III. (10s.)—W. M. JUDD, 151 Holmesdale Road, Bromley, Kent.  
28 IV. (7s. 6d.) & 33 R. N.—MRS. S. E. WILLBR, 33 High Street, Fareham, Hants.  
H. C.—26, 27.

*Class 603.—Belgian Hare Does, under six months. [13 entries.]*

- 44 I. (30s.)—F. FINDALL, 26 Vyner Street, Haxby Road, York.  
46 II. (20s.)—C. CHAMBER, 39 Thorpe Street, Shotton Colliery, Sunderland.  
40 III. (10s.)—MRS. S. E. WILLBR, 33 High Street, Fareham, Hants.  
37 IV. (7s. 6d.)—A. FANSHAW, 55 Gill Street, Hoyland, Barnsley.  
35 R. N.—P. E. GREENING, Cowley Villa, Hockmore Street, Cowley, Oxford.  
H. C.—33, 41.      C.—38.

*Class 604.—Belgian Hare Bucks, under four months. [10 entries.]*

- 47 I. (30s.)—J. WATERS, Tredwell Farm, Bickley, Kent.  
49 II. (20s.)—W. EXELBY, 97 Poppleton Road, York.  
53 III. (10s.)—T. WARD SWALES, 21 South Parade, Spalding.  
56 IV. (7s. 6d.)—FEBTHAM & SON, Bowden Close, Crook, Durham.  
54 R. N.—J. MUSGROVE, 3 Renwick Terrace, Bensham, Gateshead.  
H. C.—61.

*Class 605.—Belgian Hare Does, under four months. [16 entries.]*

- 71 I. (30s.)—FEBTHAM & SON, Bowden Close, Crook, Durham.  
66 II. (20s.)—A. S. TABRANT, 118 Wornington Road, North Kensington.  
60 III. (10s.)—W. EXELBY, 97 Poppleton Road, York.  
60 IV. (7s. 6d.)—G. MOFFATT, 15 Princess Street, Mansfield, Notts.  
70 R. N.—R. IRWIN, Victoria Terrace, Lanchester, Co. Durham.  
H. C.—62.

## Flemish Giants.\*

*Class 606.—Flemish Giant Adult Bucks. [7 entries.]*

- 73 I. (30s.) & R. N. for Special.†) —S. JEFFERIES, 25 Treharne Road, Cadroxton, Barry.  
79 II. (20s.)—T. MAUDSLEY, 54 & 57 Market Hall, Southport.  
78 III. (10s.)—R. J. BELLCHAMBER, Post Office, Hampton Wick, Middlesex.  
77 IV. (5s.)—W. M. WARENETT, 49 Grey Terrace, Ferryhill, Co. Durham.

*Class 607.—Flemish Giant Adult Does. [4 entries.]*

- 83 I. (30s.) & Special.†) —R. J. BELLCHAMBER, Post Office, Hampton Wick, Middlesex.

*Class 608.—Flemish Giant Bucks or Does, under six months. [6 entries.]*

- 85 I. (30s.) & R. N. for Special.†) —J. O. WILLIS, High Street, Ewell, Surrey.  
86 II. (20s.) & 89 R. N.—R. J. BELLCHAMBER, Post Office, Hampton Wick, Middlesex.  
87 III. (10s.)—T. PETTIGREW, The Dene, Seaham Harbour.  
88 IV. (5s.)—G. ILETT, 18 Dunnrow Road, North Stratford.

*Class 609.—Flemish Giant Bucks or Does, under four months. [7 entries.]*

- 91 I. (30s.) & Special.†) —J. O. WILLIS, High Street, Ewell, Surrey.  
96 II. (20s.)—T. MAUDSLEY, 54 & 57, Market Hall, Southport.  
92 III. (10s.) & 95 IV. (5s.)—R. J. BELLCHAMBER, Post Office, Hampton Wick.  
93 R. N.—NORR SHARMAN, 2 Carville Cottages, Wallsend-on-Tyne.  
H. C.—90.

\* The Newbury Challenge Trophy given by the National Belgian Hare Club for the best Belgian Hare in Classes 600-605.

† Fourth Prizes given by the National Flemish Giant Rabbit Club.

\* Special Prize given by the National Flemish Giant Rabbit Club for the best adult Flemish Giant.

† Special Prize given by the National Flemish Giant Rabbit Club for the best young Flemish Giant.

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## English.

Class 610.—*English Adult Bucks or Does, any colour.* [11 entries.]

- 100 I. (30s. & Special.<sup>1</sup>)—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.  
 103 II. (20s.)—F. BARMORE, 21 Roberts Street, Patricroft.  
 104 III. (10s.)—JOHNSON & BELLAMY, 221 Freeman Street, Grimsby.  
 99 E. N. C. STABLER, 158 Craig Street, Darlington.  
 H. C.—105.

Class 611.—*English Bucks or Does, black or blue, under five months.* [18 entries.]

- 113 I. (30s.)—J. T. SMITH, 3 Godbey Street, Newton, near Hyde, Cheshire.  
 109 II. (20s.)—J. JOHNSON, Shadforth, Durham.  
 125 III. (10s.)—A. FURNISH, 6 Upper Russell Street, Darlington.  
 118 E. N.—MRS. J. L. APPLETON, Molescroft, Beverley.  
 H. C.—116.

Class 612.—*English Bucks or Does, any other colour under five months.* [18 entries.]

- 142 I. (30s. & E. N. for Special.<sup>1</sup>)—H. FURNISH, Upper Russell Street, Darlington.  
 137 II. (20s.)—WILLIAMS & SON, 1 Station Terrace, Nantybwlch, Tredegar.  
 134 III. (10s.)—C. STABLER, 158 Craig Street, Darlington.  
 143 E. N.—M. KENNELYSIDE, 13 Cornwall Street, West Hartlepool.  
 H. C.—129.

## Dutch.

Class 613.—*Dutch Adult Bucks or Does, any colour.* [11 entries.]

- 149 I. (30s. & Special.<sup>2</sup>)—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.  
 150 II. (20s.)—T. WARD SWALES, 21 South Parade, Spalding.  
 147 III. (10s.)—W. E. PARRY, Merton Abbey, Bootle, Liverpool.  
 154 E. N.—BANK & MAWSON, 79 Park Road, Thackley, Bradford, Yorks.  
 H. C.—144.

Class 614.—*Black Dutch Bucks or Does, under four months.* [19 entries.]

- 163 I. (30s.)—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.  
 156 II. (20s.)—J. W. HANDFORD, 30 Thornton Lodge Road, Huddersfield.  
 157 III. (10s.)—J. JOHNSON, Shadforth, Durham.  
 172 E. N.—T. W. KIDD, Westgate, Durham.  
 H. C.—165.

Class 615.—*Dutch Bucks or Does, any other colour, under four months.* [19 entries.]

- 177 I. (30s. & E. N. for Special.<sup>3</sup>)—W. E. PARRY, Merton Abbey, Bootle, Liverpool.  
 185 II. (20s.)—FOORD BROS., Halfway House, Thornley & Co., Durham.  
 174 III. (10s.)—L. WEBSTER, North Road, Sutton-on-Trent, Newark.  
 181 E. N.—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.  
 H. C.—186, 191. C.—188.

## Angoras.

Class 616.—*Angora Bucks or Does, Adult.* [12 entries.]

- 198 I. (30s. & Special.<sup>4</sup>)—J. & E. HOLMES, 44 Old Birch, Darwen, Lancs.  
 196 II. (20s. & E. N. for Special.<sup>5</sup>)—A. WRIGHT, Ullesthorpe, near Lutterworth.  
 203 III. (10s.) & 202 E. N.—MISS E. MILNES, 9 Kent Road, Harrogate.  
 H. C.—199, 204. C.—200.

Class 617.—*Angora Bucks or Does, under four months.* [14 entries.]

- 210 I. (30s. & Special.<sup>6</sup>)—DODD & SPARK, Graham Street, Stanhope, Durham.  
 213 II. (20s. & E. N. for Special.<sup>6</sup>)—J. & E. HOLMES, 44 Old Birch, Darwen, Lancs.  
 209 III. (10s.)—C. BICKERTON & SON, 3 Waddington Street, Cockton Hill, Durham.  
 217 E. N.—MISS E. MILNES, 9 Kent Road, Harrogate.  
 H. C.—205, 207, 212. C.—211.

<sup>1</sup> Special Prize given by the National English Rabbit Club for the best English Rabbit in Classes 610-612.

<sup>2</sup> Special Prize given by the United Kingdom Dutch Rabbit Club for the best Dutch Rabbit in Classes 613-615.

<sup>3</sup> Special Prize given by the Universal Angora Rabbit Club for the best Angora Adult.

<sup>4</sup> Special Prize given by the Universal Angora Rabbit Club for the best Young Angora.



### Beverens.<sup>1</sup>

Class 618.—*Beveren Giant Buck, adult.* [14 entries.]

- 226 I. (30s.) & 221 II. (20s.)—W. ADAMS, Oakdene, Loughton, Essex.  
 222 III. (10s.)—MRS. W. B. GOODR, Aldborough Lodge, Boroughbridge.  
 230 IV. (4s.)—E. A. C. LLOYD, The Briars, Gerrards Cross, Bucks.  
 231 V. (4s.)—MRS. VESSIE E. COEMERS, Cathedral School, Llandaff, S. Wales.  
 232 R. N.—LADY LAYLAND-BARRATT, The Manor House, Torquay.  
 H. C.—220. C.—218.

Class 619.—*Beveren Giant Does, adult.* [12 entries.]<sup>e</sup>

- 233 I. (30s.)—A. MAXWELL, May Cottage, Laleham-on-Thames.  
 234 II. (20s.) & 240 IV. (6s.)—W. ADAMS, Oakdene, Loughton, Essex.  
 244 III. (10s.)—G. COBB, The Poplars, Leavesden Green, Watford.  
 235 V. (4s.)—MRS. W. B. GOODR, Aldborough Lodge, Boroughbridge.  
 237 R. N.—CAPTAIN R. MAYER, Collington Manor Rabbitry, Bexhill.  
 H. C.—239. C.—236.

Class 620.—*Beveren Giant Bucks or Does, under four months.* [19 entries.]

- 262 I. (30s.)—MRS. A. CHAVASSE, 56 High Street, Sutton Coldfield.  
 249 II. (20s.)—CAPTAIN R. MAYER, Collington Manor Rabbitry, Bexhill.  
 264 III. (10s.)—W. ADAMS, Oakdene, Loughton, Essex.  
 269 IV. (6s.)—S. KIRBY, "Oaklea," Fairwater Grove, Llandaff, Cardiff.  
 257 V. (4s.)—DOUGLAS NEAME, Riverbank, Laleham, Staines.  
 253 R. N.—MRS. EDWIN ROBSON, Sutton House, Sutton, Hull.  
 H. C.—246, 250, 253, 260. C.—256.

Class 621.—*Beveren Giant White Bucks or Does, any age.* [9 entries.]

- 264 I. (30s.) & 267 V. (4s.)—MRS. LACY-HULBERT, Morden Grange, Mitcham, Surrey.  
 265 II. (20s.)—F. M. REYNOLDS, Egerton Road, Melton Mowbray.  
 266 III. (10s.)—MRS. W. B. GOODR, Aldborough Lodge, Boroughbridge.  
 268 IV. (6s.)—G. COBB, The Poplars, Leavesden Green, Watford.  
 H. C.—271. C.—269, 272.

### Havanas.<sup>2</sup>

Class 622.—*Havana Bucks, adult.* [6 entries.]

- 276 III. (10s.)—G. D. P. TURNER, 8 Fairwater Grove, Llandaff, Glam.  
 276 IV. (6s.)—A. MAXWELL, May Cottage, Laleham-on-Thames.  
 275 V. (4s.)—MISS S. MACFIE, Rowton Hall, Chester.

Class 623.—*Havana Does, adult.* [6 entries.]

- 282 IV. (6s.)—P. T. ALLEN, 3 High Street, Ramsey, Huntingdonshire.  
 281 V. (4s.)—MISS S. MACFIE, Rowton Hall, Chester.

Class 624.—*Havana Bucks or Does, under four months.* [7 entries.]

- 287 II. (20s.)—A. MAXWELL, May Cottage, Laleham-on-Thames.  
 292 III. (10s.)—P. T. ALLEN, 3 High Street, Ramsey, Huntingdonshire.  
 291 IV. (6s.) & 288 V. (4s.)—MRS. WOOLSTON-WATT, 290 Maryvale Road, Bournville, Birmingham.

### Silver.

Class 625.—*Silver Grey Bucks or Does, Adult.* [12 entries.]

- 296 I. (30s.)—B. SANDERSON, 35 Northumberland Street, West Hartlepool.  
 298 II. (20s.)—W. H. GREENLEAF, Lily Bank, Davyhulme, Manchester.  
 299 III. (10s.)—F. W. WESTERN, J. P. Holme Grove, Biggleswade.  
 295 R. N.—S. LAMB, 25 Peel Green Road, Barton-on-Irwell, Patricroft, Manchester.

Class 626.—*Silver Grey Bucks or Does, under five months.* [15 entries.]

- 310 I. (30s.)—S. LAMB, 25 Peel Green Road, Barton-on-Irwell, Patricroft, Manchester.  
 312 II. (20s.) & 309 R. N.—COOK & OUGHTRED, Springfield, West Hartlepool.  
 308 III. (10s.)—A. K. CROWTHER, Commercial Street, Batley, Yorks.  
 H. C.—313. C.—305.

\* Class 627.—*Silver Fawn Bucks or Does, Adult.* [6 entries.]

- 321 I. (30s. & Special s.)—J. PARKER, c/o G. Dobinson, 12 Havelock Street, Darlington.  
 325 II. (20s.) & 322 III. (10s.)—J. W. BROWN, 8 Graham Terrace, New Shildon.  
 324 R. N.—MRS. R. GREENWOOD, Harmin Road, Barnard Castle.  
 H. C.—323.

<sup>1</sup> Fourth and Fifth Prizes given by the Beveren Club.

<sup>2</sup> Fourth and Fifth Prizes given by the Beveren Club.

<sup>3</sup> Special Prize of £1 is given by the National Silver Rabbit Club for the best Adult Silver, any colour.

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Class 628.—*Silver Fawn, Bucks or Does, under five months.* [15 entries.]

- 324 I. (30s. & R. N. for Special.<sup>1</sup>)—J. EVANS, 15 Charles Street, Darlington.  
 331 II. (20s.)—J. W. BROWN, 8 Graham Terrace, New Shildon, Co. Durham.  
 335 III. (10s.)—R. JACKSON, 7 Graham Terrace, New Shildon, Co. Durham.  
 326 R. N.—F. W. WESTERN, Holme Grove, Biggleswade.  
 H. C.—330. C.—339.

Class 629.—*Silver Brown Bucks or Does, Adult.* [5 entries.]

- 345 I. (30s. & R. N. for Special.<sup>2</sup>) & 344 II. (20s.)—THOMPSON BROS., Front Street, Stanhope S.O., Co. Durham.  
 341 III. (10s.)—F. W. WESTERN, Holme Grove, Biggleswade.

Class 630.—*Silver Brown Bucks or Does, under five months.* [11 entries.]

- 350 I. (30s. & Special.<sup>3</sup>) & 353 II. (20s.)—THOMPSON BROS., Front Street, Stanhope S.O.  
 347 III. (10s.)—J. BARAGWANTH, The Maples, 88 Alester Road, Moseley, Birmingham.  
 352 R. N.—W. SKINNER, Station Road, Eaglescliffe.  
 H. C.—346. C.—348.

### Lops.

Class 631.—*Lop Bucks or Does, any age.* [8 entries.]

- 358 I. (30s.)—A. K. CROWTHER, Commercial Street, Bailey, Yorks.  
 361 II. (20s.) & 357 III. (10s.)—G. ROBSON, Tollereton, Eastingfold, Yorks.  
 362 R. N.—J. MUSGRAVE, 8 Renwick Terrace, Bensham, Gateshead.  
 H. C.—359. C.—360.

### Tans.

Class 632.—*Tan Buck or Doe, adult.* [3 entries.]

- 367 I. (30s. & Special.<sup>4</sup>) & 370 R. N.—H. RICHARDSON, 10 Baker Street, York.  
 375 II. (20s.)—DAVID W. IRVING, 11 Chambers Road, Southport.  
 368 III. (10s.)—MRS. H. HILL, 356 Main Road, Darnall, Sheffield.  
 H. C.—366. C.—369.

Class 633.—*Tan Bucks or Does, under five months.* [3 entries.]

- 372 I. (30s. & R. N. for Special.<sup>5</sup>)—A. PICKLES, 13 Woodlands Road, Gillington, Bradford.  
 371 II. (20s.)—DAVID W. IRVING, 11 Chambers Road, Southport.

### Polish.<sup>4</sup>

Class 634.—*Polish Bucks or Does, under six months.* [13 entries.]

- 381 I. (30s. & Special.<sup>6</sup>)—DR. J. M. SHAW, 12 Park Terrace, Sunderland.  
 375 II. (20s. & R. N. for Special.<sup>7</sup>) & 373 IV. (5s.)—MRS. H. DANCER, Church Street, Leatherhead, Surrey.  
 378 III. (10s.)—ATKINSON & NOEL, 63 Station Road, Hetton-le-Hole, Co. Durham.  
 376 R. N.—J. MEYNELL, 49 North Road, Darlington.  
 H. C.—384. C.—374.

### Dressed Pelts.

Class 635.—*Single Dressed Skins.* [1 entry.]  
 [No Award.]

Class 636.—*Selection of Matched Skins in sets of three.* [3 entries.]

- 380 I. (30s.)—C. HALL, Church View, Sedzfield, Durham.  
 388 II. (20s.)—MRS. LACY HULBERT, Morden Grange, Mitcham, Surrey.  
 389 III. (10s.)—MRS. E. F. BEDFORD, Morley Rectory, Derby.

### Cavies.

Class 637.—*Porcupine Adults.* [5 entries.]

- 383 I. (30s. & R. N. for Special.<sup>8</sup>)—J. HESLIN, Dunure Cottage, Bonny Bridge, Scotland.  
 392 II. (20s.)—WALTON & WALLER, 31 Church Street, Shildon, Co. Durham.  
 385 III. (10s.)—W. J. SPEARE, 363 Hubert Road, Selly Oak, Birmingham.  
 394 R. N.—D. WALSH, 38 Lydia Street, Acerington.  
 H. C.—391.

<sup>1</sup> Special Prize of £1 1s. given by the National Silver Rabbit Club for the best Young Silver, any colour.

<sup>2</sup> Special Prize of £1 1s. given by the National Silver Rabbit Club for the best Adult Silver any colour.

<sup>3</sup> Special Prize of 5s. given by the Tan Club for the best Tan in Classes 632 and 633.

<sup>4</sup> Fourth Prize given by the National Polish Rabbit Club.

<sup>5</sup> Special Prize given by the National Polish Rabbit Club for the best Polish Rabbit in Class 634.

<sup>6</sup> Special Prize given by the National Cavy Club for the best Cavy.

cxli *Award of Rabbit Prizes at Darlington, 1920.*

Class 638.—*Abyssinian Adults*. [9 entries.]

- 338 I. (30s.) & 401 III. (10s.)—T. GRAYMARK, 85 Dudden Hill Lane, Willesden.  
 339 II. (20s.)—E. E. JOHNSON, 9 Jacksonville, Goole, Yorks.  
 386 R. N.—E. E. LLOYD, 12 Larkspur Terrace, Jesmond, Newcastle-on-Tyne.  
 H. C.—400, 403, 404.

Class 639.—*Black Smooth Self, Adults*. [9 entries.]

- 413 I. (30s.) & 411 III. (10s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.  
 405 II. (20s.)—J. A. BUTLER, 39 Rawmarsh Hill, Parkgate, Rotherham.  
 410 R. N.—J. H. MILLINGTON, 181 Maitro Street, Rotherham.  
 H. C.—408, 409. C.—412.

Class 640.—*Red Smooth Self, Adults*. [5 entries.]

- 418 I. (30s.) & 417 II. (20s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.  
 415 III. (10s.)—F. HARGREAVES, "Edenhurst," Brooklands Road, Burnley.  
 416 R. N.—G. C. FIRTH, 40 Bennett Road, Cleethorpes.  
 H. C.—411.

Class 641.—*Cream Smooth Self, Adults*. [13 entries.]

- 421 I. (30s.)—E. E. JOHNSON, 9 Jacksonville, Goole, Yorks.  
 430 II. (20s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.  
 422 III. (10s.)—A. J. PHILLIPSON, 3 The Hawthorns, Woodbridge Road, Moseley, Birmingham.  
 420 R. N.—THOMPSON BROS., 4 Osney Crescent, London, N.W.  
 H. C.—428, 431. C.—419.

Class 642.—*Smooth Self, any other colour, Adults*. [6 entries.]

- 435 I. (30s.)—C. SWINDELL, 20 Thudchill, Manchester.  
 434 II. (20s.)—L. TINGLE, 10 Hollybush Street, Parkgate, Rotherham, Yorks.  
 436 III. (10s.)—A. R. CUNLIFFE-OWEN, The Red House Loughborough.  
 432 R. N.—M. GOLIGHTLY, 23 Boyne Street, Willington, Durham.  
 H. C.—437.

Class 643.—*Smooth Golden Agoute, adults*. [15 entries.]

- 442 I. (30s. & Special<sup>1</sup>)—A. FOSTER, Myrtle Road, Bingley, Yorkshire.  
 440 II. (20s. & R. N. for Special<sup>1</sup>)—PICKUP & CRANE, 5 Clarence Street, Barnoldswick, Yorks.  
 452 III. (10s.)—F. & W. BREWER, Whoberley, Coventry.  
 443 R. N.—J. WRIGHT, 16 Bridge Street, Bishop Auckland.  
 H. C.—444, 451. C.—449.

Class 644.—*Smooth Silver Agoute, adults*. [6 entries.]

- 454 I. (30s. & Special<sup>2</sup>)—F. HARGREAVES, "Edenhurst," Brooklands Road, Burnley.  
 457 II. (20s. & R. N. for Special<sup>2</sup>) & 458 R. N.—H. HABERSHON, 15 Newlyn Place, Wordsworth, Sheffield.  
 455 III. (10s.)—E. LANKFORD, The Rising Sun, Hatfield.  
 H. C.—453, 456.

Class 645.—*Smooth Tortoise and White, adults*. [3 entries.]

- 460 I. (30s.)—H. BRADLEY, Dawson Hill, Morley, Leeds.  
 459 II. (20s.) & 461 III. (10s.)—A. BROOKS, 29 Park Grove, Levenshulme.

Class 646.—*Smooth Dutch, any colour, adults*. [8 entries.]

- 464 I. (30s. & Special<sup>3</sup>) & 468 III. (10s.)—J. F. KERR, Harviestoun Castle, Dollar.  
 463 II. (20s.) & 467 R. N.—F. HARGREAVES, "Edenhurst," Brooklands Road, Burnley.  
 H. C.—466, 469. C.—462.

Class 647.—*Smooth Self, any colour, under four months*. [13 entries.]

- 477 I. (30s.) & 474 R. N.—T. WATERWORTH, 48 Primrose Street, Accrington, Lancs.  
 475 II. (20s.)—G. C. FIRTH, 40 Bennett Road, Cleethorpes.  
 476 III. (10s.)—H. HABERSHON, 15 Newlyn Place, Wordsworth, Sheffield.  
 H. C.—473, 480, 482. C.—472.

Class 648.—*Any other Variety, under four months*. [15 entries.]

- 485 I. (30s.)—T. E. LONGSTAFF, Waterville, Growenor Drive, Whitley Bay.  
 486 II. (20s.)—J. F. KERR, Harviestoun Castle, Dollar.  
 490 III. (10s.)—E. BROOKE, The Nurseries, Willden, Bradford.  
 492 R. N.—H. WALSH, 38 Lydia Street, Accrington.  
 H. C.—488, 494.

<sup>1</sup> Special Prize given by the National Cavy Club for the best Golden Agoute.

<sup>2</sup> Special Prize given by the National Cavy Club for the best Silver Agoute.

<sup>3</sup> Special Prize given by the National Cavy Club for the best Cavy.

## FARM AND DAIRY PRODUCE OF THE UNITED KINGDOM.

### Butter.

First Prize £4, Second Prize £2, Third Prize £1 in each Class.

**Class 649.**—*Two Pounds of Fresh Butter, without any salt, made up in plain pounds, from the milk of Channel Island, Devon, or South Devon Cattle and their crosses.* [18 entries.]

10 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, N. Devon.

11 II.—MRS. ANNIE PRICHARD, The Dairy, Wolbeck, Worksop.

12 III.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.

10 R. N.—BRIG.-GEN. SIR JOSEPH LAYCOCK, K.C.M.G., D.S.O., Wiseton, Bawtry.

H. C.—6. C.—7.

**Class 650.**—*Two Pounds of Fresh Butter, without any salt, made up in plain pounds, from the milk of Cattle of any breed or cross other than those mentioned in Class 649.* [17 entries.]

19 I.—MRS. JOHN ARMSTRONG, New Hall, Staveley, Kendal.

35 II.—MRS. WALTON, Bail Green Farm, Mickleton, Yorks.

29 III.—MRS. W. E. MUDD, Thornthwaite, Darley, Harrogate.

32 R. N.—MISS MARY SIMPSON, Hall Farm, Monlton, Middleton Tyns, Yorks.

H. C.—23. C.—25.

**Class 651.**—*Two Pounds of Fresh Butter, slightly salted, made up in plain pounds, from the milk of Channel Island, Devon, or South Devon Cattle and their crosses.* [24 entries.]

56 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.

52 II.—MRS. D. T. POSKITT, Hay Green, Fish Lake, Doncaster.

51 III.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.

48 R. N.—MRS. H. E. JEROME, Bilton Hall, York.

H. C.—37, 42. C.—35.

**Class 652.**—*Two Pounds of Fresh Butter, slightly salted, made up in plain pounds, from the milk of Cattle of any breed or cross other than those mentioned in Class 651.* [24 entries.]

79 I.—MISS S. H. ROBINSON, Red House Farm, Liverton, Loftus S.O.

78 II.—MRS. W. E. MUDD, Thornthwaite, Darley, Harrogate.

68 III.—MRS. GILL, West Crace Row, Butterknowle, Co. Durham.

60 R. N.—MRS. JOHN ARMSTRONG, New Hall, Staveley, Kendal.

H. C.—71, 77. C.—67.

**Class 653.**—*Three Pounds of Fresh Butter, slightly salted, made up in pounds in the most attractive marketable designs.* [9 entries.]

32 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.

40 II.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.

36 III.—MRS. A. A. BERR, Stoodleigh Barton, Stoodleigh, Tiverton, Devon.

30 R. N.—MISS DOROTHY SMITH, Home Farm, Hulton Gate, Guisborough.

H. C.—85, 87. C.—88.

**Class 654.**—*Three Pounds of Fresh Butter, slightly salted, made up in pounds, and packed in non-returnable boxes for transmission by rail or parcel post.* [8 entries.]

160 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.

97 II.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.

98 III.—MISS S. H. ROBINSON, Red House Farm, Liverton, Loftus S.O.

96 R. N.—MRS. MATILDA MORTON, Leake Hall, Thirsk.

H. C.—93, 91.

### Cheese.

Made in 1920.

**Class 655.**—*Two Cheshire Cheeses, Coloured, not less than 40 lb. each.* [5 entries.]

104 I. (£3.)—F. A. MOORE, The Grange, Checkley, Nantwich.

105 II. (£2.)—BUTON CO-OPERATIVE DAIRIES, LTD., Buton Eleven Towns, Salop.

103 III. (£2.)—W. R. LKA, Manor Farm, Batherton, Nantwich.

102 R. N.—W. H. HOBSON, Woodhey Hall, Nantwich.

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Class 656.—*Two Cheshire Cheeses, Uncoloured, not less than 40 lb. each.*  
[5 entries.]

- 110 I. (£5).—RUXTON CO-OPERATIVE DAIRIES, LTD., Ruyton Eleven Towns, Salop.  
109 II. (£3).—W. R. LEA, Manor Farm, Hatherton, Nantwich.  
108 III. (£2).—F. A. MOORE, The Grange, Checkley, Nantwich.  
107 R. N.—W. H. HOLSON, Woodhey Hall, Nantwich.

Class 657.—*Two Cheddar Cheeses, not less than 50 lb. each.* [9 entries.]

- 119 I. (£5).—ALEXANDER WYLLIE, Mossiel, Mauchline, Ayrshire.  
111 II. (£3).—B. R. BROUGHTON, Manor Farm, North Perrott, Crewkerne, Somerset.  
114 III. (£2).—ALEXANDER CROSS, Knockdon, Maybole.  
116 R. N.—ROBERT KERR, Mackermore, Newton Stewart, Wigtownshire.  
H. C.—118.

Class 658.—*Two Cheddar Truckles.* [10 entries.]

- 120 I. (£4).—ALEXANDER WYLLIE, Mossiel, Mauchline, Ayrshire.  
120 II. (£2).—B. R. BROUGHTON, Manor Farm, North Perrott, Crewkerne, Somerset.  
123 III. (£1).—P. H. FRANCIS, Miller's Farm, Upton Noble, Bruton, Somerset.  
125 R. N.—ROBERT KERR, Mackermore, Newton Stewart, Wigtownshire.  
H. C.—123.      C.—124.

Class 659.—*Two Lancashire Cheeses, not over 12 lb. each.* [1 entry.]  
[No Award.]

Class 660.—*Two Staffordshire or Derbyshire Cheeses.* [2 entries.]

- 131 I. (£4).—CHEDDAR VALLEY DAIRY COMPANY, LTD., 47 City Road, Cardiff.  
132 R. N.—J. M. NUTTALL & CO., LTD., Dove Dairy, Hartington, Buxton.

Class 661.—*Two Stilton Cheeses.* [9 entries.]

- 140 I. (£4).—MISSES M. F. & J. WEBSTER, Hatton Lodge, Nether Brompton, Melton Mowbray.  
136 II. (£2).—HENRY MORRIS, Manor Farm, Saxelby, Melton Mowbray.  
139 III. (£1).—FRED. WEBSTER, Shoby Priory, Melton Mowbray.  
141 R. N.—WEBSTER & RICHARDSON, The Dairy, Twyford, Melton Mowbray.  
H. C.—133.      C.—135.

Class 662.—*Two Wensleydale Cheeses, Stilton Shape.* [10 entries.]

- 151 I. (£4).—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.  
150 II. (£2).—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.  
145 III. (£1).—MISS RACHEL JAMES, Llancayo, Usk, Mon.  
144 R. N.—GEORGE HARRISON, Gainford Hall, Darlington.

Class 663.—*Two Wensleydale Cheeses, Flat Shape.* [10 entries.]

- 150 I. (£4).—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.  
161 II. (£2).—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.  
154 III. (£1).—MRS. T. DIMSDALE, Swine Cote, Thoraby, Aysgarth.  
158 R. N.—MRS. JOHN PROCTOR, Saw Mill House, Hunton, Bedale.

Class 664.—*Two Cotherstone Cheeses, Stilton Shape.* [7 entries.]

- 167 I. (£4).—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.  
164 II. (£2).—MRS. R. M. MEYCALFE, Hundah, Barnard Castle.  
168 III. (£1).—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.  
163 R. N.—GEORGE HARRISON, Gainford Hall, Darlington.  
H. C.—162.

Class 665.—*Two Cotherstone Cheeses, Flat Shape.* [5 entries.]

- 170 I. (£4).—GEORGE HARRISON, Gainford Hall, Darlington.  
173 II. (£2).—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.  
172 R. N.—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.

Class 666.—*Two Cleveland Cheeses.* [7 entries.]

- 176 I. (£4).—ROBERT HICKS, Stonebeck Gate Farm, Danby, Grosmont.  
174 II. (£2).—JOSEPH CLEMMIT, Park Head Farm, Fryup, Lealholm, Grosmont, Yorks.  
175 III. (£1).—MRS. J. T. GARBUTT, Street Farm, Loftus.  
180 R. N.—MISS S. H. ROBINSON, Red House Farm, Liverton, Lottus S.O.

Class 667.—*Two Coerphilly Cheeses.* [15 entries.]

- 194 I. (£4).—THE WILTS UNITED DAIRIES, LTD., Wells, Somerset.  
183 II. (£2).—MISS E. HOWELLS, Rythir Fawr, Pencoed, Bridgend, Glam.  
183 III. (£1).—THE WEST OF ENGLAND CREAMERY, Highbridge, Somerset.  
195 R. N.—MRS. T. JOHN, Ruthin Farm, Pencoed, Bridgend.  
H. C.—182.

## Award of Prizes at Durlington, 1920. cxlix

**Class 668.**—*Two Small Cheeses, not exceeding 6 lb. each, of Cheddar or Cheshire Character.* [22 entries.]

- 203 I. (£3.)—MRS. E. M. EVANS, Welshers Farm, Clatworthy, Wiveliscombe.  
 214 II. (£2.)—MISS F. A. RAWLE, South Quarrie Farm, Wheddon Cross, Taunton.  
 201 III. (£1.)—MISS ELSIE G. COOK, Ashford Farm, Ashford, Middlesex.  
 198 R. N.—MISS K. M. CLAPP, Manor Farm, Oake, Taunton, Somerset.  
 H. C.—196, 199, 216. C.—200.

**Class 669.**—*Two Small Chesees, not exceeding 6 lb. each, of Stilton or Wensleydale Character.* [21 entries.]

- 220 I. (£3.)—MISS B. J. MUDD, Aldborough Dairy, Boroughbridge.  
 224 II. (£2.)—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.  
 222 III. (£1.)—MISS E. M. ROBINSON, Sherwood, Barnard Castle.  
 223 R. N.—MRS. R. M. METCALFE, Hundah, Barnard Castle.  
 H. C.—222, 226. C.—223, 226, 225.

**Class 670.**—*Two Soft Cheeses made from Whole Milk.* [8 entries.]

- 243 I. (£3.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.  
 241 II. (£2.)—MISS BESSIE MARSH, Church Farm, Shapwick, Bridgwater, Somerset.  
 242 III. (£1.)—MISS E. J. MUDD, Aldborough Dairy, Boroughbridge.

**Class 671.**—*Two Soft Cheeses made from Cream without the addition of Rennet.* [11 entries.]

- 250 I. (£3.)—MISS M. GARBUTT, Street Farm, Loftus.  
 251 II. (£2.)—HUBERT HUTT, Wheatfield, Tetworth, Oxon.  
 244 III. (£1.)—MRS. A. J. LEWIS, Low Green Farm, Romaldkirk, Darlington.  
 246 R. N.—R. A. BENNETT & A. H. S. HOWARD, Quarry Farm, Thornbury, Glos.

## Cider and Perry.

First Prize, £3; Second Prize, £2; Third Prize, £1, in each class.

**Class 672.**—*Casks of Dry Cider, not less than 9, and not more than 18 gallons, made in 1919.* [5 entries.]

- 257 I.—HERBERT J. DAVIS, Goldsborough Farm, Sutton Montis, Sparkford, Somerset.  
 260 II.—TILLEY BROS., East Compton, Shepton Mallet, Somerset.

**Class 673.**—*Casks of Sweet Cider, not less than 9, and not more than 18 gallons, made in 1919.* [8 entries.]

- 262 I.—HERBERT J. DAVIS, Goldsborough Farm, Sutton Montis, Sparkford, Somerset.  
 258 II.—TILLEY BROS., East Compton, Shepton Mallet, Somerset.

**Class 674.**—*Casks of Cider, not less than 9, and not more than 18 gallons, made previous to 1919.* [1 entry.]

- 270 I.—RIDLER & SON, Clehonger, Hereford.

**Class 675.**—*One Dozen Bottles of Dry Cider, made in 1919.* [9 entries.]

- 271 I.—R. N. for Challenge Cup,<sup>1</sup> & 272 R. N.—HERBERT J. DAVIS, Goldsborough Farm, Sutton Montis, Sparkford, Somerset.  
 273 II. & 278 III.—TILLEY BROS., East Compton, Shepton Mallet, Somerset.

**Class 676.**—*One Dozen Bottles of Sweet Cider, made in 1919.* [20 entries.]

- 284 I. Challenge Cup,<sup>1</sup> & 285 II.—CAPT. F. W. CRAWSHAY, Hempnall, Norwich.  
 280 III.—H. J. JONES, Church Farm, Blakemire, Herefordshire.  
 283 R. N.—RIDLER & SON, Clehonger, Hereford.  
 H. C.—286. C.—280.

**Class 677.**—*One Dozen Bottles of Cider, made previous to 1919.* [7 entries.]

- 286 I. & 305 III.—RIDLER & SON, Clehonger, Hereford.  
 300 II.—CAPT. F. W. CRAWSHAY, Hempnall, Norwich.  
 304 R. N.—W. D. LANE, White House, Llanvetherin, Abergavenny.

**Class 678.**—*One Dozen Bottles of Dry Perry.* [1 entry.]

- 307 I.—JOSEPH M. PARRY & CO., LTD., Westbury Cider Works, Leominster.

**Class 679.**—*One Dozen Bottles of Sweet Perry.* [3 entries.]

- 310 I.—HENRY ROBBINS & SON, Ebley, Stroud, Glos.  
 308 II.—JOSEPH M. PARRY & CO., LTD., Westbury Cider Works, Leominster.

<sup>1</sup> Challenge Cup given by the Cider Growers of the West of England for the best exhibit of Cider in Classes 672 to 677.

### Bottled Fruits and Vegetables.

**Class 680.**—*Six Varieties of Fruit bottled in water, to be selected from Red Plums, Yellow Plums, Victoria Plums, Greengages, Pears, Apricots, Apples, Damsons, and Cherries.* [6 entries.]

- 311 I. (£3.)—MISS J. BLACKBURN, College Square, Stokesley, Yorkshire.  
 314 II. (£2.)—MRS. M. E. PARLOUR, Croft, Darlington.  
 316 III. (£1.)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.  
 312 R. N.—MISS MISTIE G. COOK, Ashford Farm, Ashford, Middlesex.  
 H. C.—313.

**Class 681.**—*Three Varieties of Soft Fruit bottled in water, to be selected from Gooseberries, Strawberries, Raspberries, Loganberries, Blackberries, Black Currants, Red and White Currants, Raspberries and Red Currants mixed.* [4 entries.]

- 317 I. (£3.)—MISS J. BLACKBURN, College Square, Stokesley, Yorkshire,  
 318 II. (£2.)—MRS. M. E. PARLOUR, Croft, Darlington.  
 320 III. (£1.)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.

**Class 682.**—*Three Varieties of Fruit, bottled in water, to be selected from Red or Victoria Plums, Yellow Plums, Pears, Apricots, Greengages, Damsons and Cherries.* [7 entries.]

- 326 I. (30s.)—FREDERICK REEKS, 30 Parkgate, Darlington.  
 323 II. (20s.)—R. FLETCHER HEARNshaw, Fox Hill, Burton Joyce, Nottingham.  
 325 III. (10s.)—MRS. M. E. PARLOUR, Croft, Darlington.  
 327 E. N.—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.

**Class 683.**—*Six Varieties of Soft Fruit, bottled in water, selected from Gooseberries, Strawberries, Raspberries, Loganberries, Blackberries, Black Currants, Red and White Currants, Raspberries and Red Currants mixed.* [7 entries.]

- 334 I. (30s.)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.  
 333 II. (20s.)—MRS. M. E. PARLOUR, Croft, Darlington.  
 330 III. (10s.)—R. FLETCHER HEARNshaw, Fox Hill, Burton Joyce, Nottingham.  
 329 E. N.—MRS. CRESWELL-WARD, Neasham Hill, Darlington.  
 H. C.—332.

**Class 684.**—*Rhubarb, bottled in water.* [5 entries.]

- 337 I. (20s.)—MISS DOROTHY PARLOUR, Waterside, Croft, Darlington.  
 329 II. (10s.)—FREDERICK REEKS, 30 Parkgate, Darlington.  
 335 E. N.—MISS MARY BINKS, Croft, Darlington.  
 H. C.—336.

**Class 685.**—*Three Varieties of Vegetables, bottled in water, selected from Peas, Broad Beans, Kidney Beans, Asparagus, and Tomatoes.* [3 entries.]

- 332 I. (30s.)—FREDERICK REEKS, 30 Parkgate, Darlington.  
 340 II. (20s.)—MISS DOROTHY PARLOUR, Waterside, Croft, Darlington.  
 341 III. (10s.)—MRS. M. E. PARLOUR, Croft, Darlington.

### Wool.<sup>1</sup>

*Of 1920 Clip.*

First Prize, £3; Second Prize, £2; Third Prize, £1; in each Class.

**Class 686.**—*Three Fleeces of Oxford Down Wool.* [8 entries.]

- 350 I.—HUGH WILLIAM STILGOE, The Grounds, Adderbury, Banbury, Oxon.  
 344 II.—HENRY AKERS & Co., Mount House, Black Bourton, Clarendon S.O., Oxon.  
 346 III.—THE DUKE OF MARLBOROUGH, Blenheim Palace, Woodstock.

**Class 687.**—*Three Fleeces of Shropshire Wool.* [3 entries.]

- 351 I. & Champion, 2 & 352 II.—EDMOND CRAIG TANNER, Eytton-on-Severn, Shrewsbury.

**Class 688.**—*Three Fleeces of Southdown Wool.* [5 entries.]

- 357 I. & 356 II.—LADY LUDLOW, Luton Hoo, Beds.  
 358 III.—J. K. WILLIAMSON, Derwin Hall, Corwen.  
 H. C.—354, 355.

<sup>1</sup> The Second and Third Prizes in Classes 686 to 703 were given by the respective Flock Book Societies.

<sup>2</sup> Silver Cup given by the British Wool Federation for the best exhibit of Wool in Classes 688 to 707.

**Class 689.**—*Three Fleeces of Hampshire Down Wool.* [13 entries.]

- 366 I.—GEORGE PHILIPPI, Crawley Court, Winchester.  
364 II.—MAJOR J. A. MORRISON, D.S.O., 14 Milton Park, Goring, Reading.  
359 III.—BRIAN, GEN. H. GREENFELL, Pickwell Manor, Oakham.  
H. C.—370, 371.

**Class 690.**—*Three Fleeces of Suffolk Wool.* [15 entries.]

- 382 I.—FRANK E. SLATER, Weston Colville Hall, Cambs.  
372 II.—THE RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.  
378 III.—JOHN L. KERBLE, Brinkam Hall, Manningtree, Essex.  
H. C.—375, 386.

**Class 691.**—*Three Fleeces of Dorset Horn Wool.* [2 entries.]

- 387 I. & 388 II.—ALFRED READ, Lower Farm, Hilton, Blandford.

**Class 692.**—*Three Fleeces of Ryeland Wool.* [10 entries.]

- 397 I. & 398 II.—DAVID J. THOMAS, Talachddu, Brecon, South Wales.  
380 III.—CAPT. H. A. CHRISTY, Llangued, Llys-wen, Breconshire.  
H. C.—393, 396.

**Class 693.**—*Three Fleeces of Kerry Hill (Wales) Wool.* [2 entries.]

- 399 I.—WILLIAM ALDERSON, Glannabell, Kerry, Newtown, Mont.

**Class 694.**—*Three Fleeces of Lincoln Long Wool.* [4 entries.]

- 404 I.—THOMAS SPINK & SONS, Hummaby.  
401 II.—ANSELL B. BOLT, Home Farm, Sturton Briggs, Lincs.  
402 III.—J. W. LEIT, Scagglethorpe Manor, Milton.

**Class 695.**—*Three Fleeces of Leicester Wool.* [9 entries.]

- 407 I.—JOHN W. HARRISON, Undermark, Leutholm, Gwent.  
405 II. & 406 III.—GEORGE HARRISON, Gairford Hall, Darlington.  
H. C.—410, 411.

**Class 696.**—*Three Fleeces of Border Leicester Wool.* [2 entries.]

- 415 I.—R. G. MURRAY & SON, Spital, Biggar.  
414 II.—W. J. CLAHOME, Little Houghton, Lesbury, Northumberland.

**Class 697.**—*Three Fleeces of Wensleydale Wool.* [19 entries.]

- 425 I.—JOHN A. WILLIS, Manor House, Carperby.  
419 II.—WILLIAM DIN-DALE, Low Bolton, Redmire, Yorks.  
416 III.—LORD HERBY BENTINCK, M.P., Underley Hall, Kirkby Laundale.  
418 B. N.—RICHARD CHESTER, Low Moor Farm, Ripon.  
H. C.—417, 422.

**Class 698.**—*Three Fleeces of Kent or Romney Marsh Wool, from Rams of any age.* [5 entries.]

- 430 I.—J. EGERTON QUESTED, The Firs, Cheriton, Kent.  
426 II.—ARTHUR FINN, Westbroke House, Lydd, Kent.  
428 III.—THE HANTOW FLOCK CO., Somerhill, Tonbridge, Kent.  
H. C.—427.

**Class 699.**—*Three Fleeces of Kent or Romney Marsh Wool, from Ewe Tegs.* [8 entries.]

- 434 I.—L. H. & G. W. FINN, Westwood Court, Faversham.  
437 II.—WALTER MISKIN, White Hall, Hoar, Rochester, Kent.  
433 III.—E. B. DUNSTER, Monypenny House, Rye, Sussex.  
H. C.—430.

**Class 700.**—*Three Fleeces of Kent or Romney Marsh Wool, excluding Rams and Ewe Tegs.* [10 entries.]

- 444 I. & R. N. for Champion,<sup>1</sup> & 442 II.—L. H. & G. W. FINN, Westwood Court, Faversham.  
449 III.—R. STANLEY STROUTS, Singleton Manor, Great Chart, Ashford.  
H. C.—447, 448.

**Class 701.**—*Three Fleeces of Cotswold Wool.* [ entries.]

- 451 I.—WILLIAM GARNE, Abington, Fairford, Glos.  
452 II.—FREDERICK NEWMAN, Cold Aston, Bourton-on-the-Water, Glos.  
450 III.—COLONEL EDWIN P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

<sup>1</sup> Silver Cup given by the British Wool Federation for the best exhibit of Wool in Classes 680 to 707.



**Class 702.—Three Fleeces of Dartmoor Wool.** [3 entries.]

454 I. & 453 II.—JOHN H. GLOVER, Delamors Farm, Cornwood, Devon.

455 III.—W. A. JOHNS & SONS, Cleve, Kelly, Lifton, Devon.

**Class 703.—Three Fleeces of Exmoor Horn Wool.** [5 entries.]

450 I. & 459 II.—PERCY SMYTH, Broford, Dulverton, Somerset.

457 III.—DANIEL NICHOLAS PURCHASE, Great Hele Barton, South Molton, Devon.

H. C.—458.

**Class 704.—Three Fleeces of First Cross between Two Distinct Breeds of Short Wool.** [1 entry.]

461 I.—LADY LUDLOW, Luton Hoe, Beds.

**Class 705.—Three Fleeces of First Cross between Two Distinct Breeds of Long Wool.** [3 entries.]

464 I. & 463 II.—ROBERT & JOHN J. PEIRSON, Tauton Farm, Stokesley.

462 III.—JOHN ATKINSON, Wilson House, Barningham, Barnard Castle.

**Class 706.—Three Fleeces of First Cross of any Long and Short Wool.** [4 entries.]

466 I.—R. R. GRIEBLE, Gabriels Manor, Edenbridge, Kent.

468 II.—ROBERT & JOHN J. PEIRSON, Tauton Farm, Stokesley.

465 III.—GREENHILL DAIRY COMPANY, Bingley.

H. C.—467.

**Class 707.—Three Fleeces of First Cross of Pure-bred Sheep, of which one must be Mountain or Moorland.** [7 entries.]

475 I.—JOE K. WILLIAMSON, Derwin Hall, Corwen, North Wales.

473 II.—A. G. RAMSAY, East Appleton, Catterick.

469 III.—GREENHILL DAIRY COMPANY, Bingley.

H. C.—472.

## HIVES, HONEY, AND BEE APPLIANCES.

**Class 1.—Collections of Hives and Appliances.** [1 entry.]

**Class 2.—Best and Most Complete Frame Hives for General Use, unpainted.** [No entry.]

**Class 3.—Most Complete and Inexpensive Frame Hives for Cottager's Use, unpainted.** [No entry.]

**Class 4.—Honey Extractors.** [1 entry.]

The above Classes 1 to 4 were not for competition.

**Class 5.—Any appliances connected with Bee-keeping.** [2 entries.] [No Award.]

**Class 6.—Comb Honey.<sup>1</sup>** [1 entry.]

63 I. (12s. 6d.)—MISS HILDA H. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

**Class 7.—Light Extracted Honey.** [2 entries.]

65 I. (12s. 6d.)—D. E. HARDING, 2 Prospect Terrace, Trimdon, Co. Durham.

64 II. (10s.)—MISS HILDA A. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

**Class 8.—Medium Extracted Honey.** [1 entry.]

66 II. (10s.)—MISS HILDA A. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

**Class 9.—Movable Comb Hive.**

[No entry.]

<sup>1</sup> Entries in Classes 6-9 can only be made by members of the Durham County Beekeepers' Association.

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## Class 10.—*Comb Honey*.<sup>1</sup> [3 entries.]

- 7 I. (15s.)—J. PEARMAN, Penny Long Lane, Derby.  
6 III. (5s.)—MISS E. A. BIRKWICK, Kirkby, Stephen, Westmorland.

## Class 11.—*Extracted Light-coloured Honey*. [4 entries.]

- 10A I. (15s.)—J. PRICE, 165 Corporation Street, Stafford.  
8 II. (10s.)—J. BIRKETT, Blundells Lane, Rainhill, Lancs.  
10 III. (5s.)—J. PEARMAN, Penny Long Lane, Derby.

## Class 12.—*Extracted Medium or Dark-coloured Honey*. [3 entries.]

- 12A I. (15s.)—J. PRICE, 165 Corporation Street, Stafford.  
11 II. (10s.)—MRS. L. MORGAN, Underwood, Portskewell, Monmouthshire.

## Class 13.—*Granulated Honey*. [3 entries.]

- 13 I. (15s.)—J. PEARMAN, Penny Long Lane, Derby.  
13A II. (10s.)—J. PRICE, 165 Corporation Street, Stafford.  
14 III. (5s.)—W. TRINDER, Edwinstowe, Newark, Notts.

## Class 14.—*Comb Honey*.<sup>2</sup> [6 entries.]

- 15 I. (15s.)—G. BRYDEN, 46 Star Hill, Rochester.  
17 II. (10s.)—MISS E. R. DEBENHAM, Bladen Dairy Farm, Briantspuddle, Dorchester.  
18 III. (5s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
20 E. N.—A. WILLMOTT, Lyndhurst, Standstead Abbots, Herts.

## Class 15.—*Extracted Light-coloured Honey*. [11 entries.]

- 28 I. (15s.)—P. J. NORTH, 9 Charles Street, Cambridge.  
29 II. (10s.)—A. E. WARREN, Old Lane Apiary, Simpson, Bletchley.  
23 III. (5s.)—G. BRYDEN, 46 Star Hill, Rochester.  
26 E. N.—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
H. C.—25.

## Class 16.—*Extracted Medium or Dark-coloured Honey*. [5 entries.]

- 34 I. (15s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
31 II. (10s.)—G. BRYDEN, 46 Star Hill, Rochester.

## Class 17.—*Granulated Honey*. [3 entries.]

- 35 I. (15s.)—G. BRYDEN, 46 Star Hill, Rochester.  
36 II. (10s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
37 III. (5s.)—A. E. WARREN, Old Lane Apiary, Simpson, Bletchley.

## Class 18.—*Three Shallow Frames of Comb Honey, for extracting, gathered during 1920*. [6 entries.]

- 41 I. (15s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
38 II. (10s.)—G. BRYDEN, 46 Star Hill, Rochester.

## Class 19.—*Heather Honey*. [2 entries.]

- 44 I. (15s.)—M. J. LAMBOLL, Chiddingfold, Surrey.  
45 II. (10s.)—J. PEARMAN, Penny Long Lane, Derby.

## Class 20.—*Heather Mixture Extracted Honey*. [2 entries.]

- 46 I. (15s.)—MRS. ANDERSON, Old Hermitage Apiary, High Hurstwood, Uckfield.  
47 II. (10s.)—J. PEARMAN, Penny Long Lane, Derby.

## Class 21.—*Best and Most Attractive Displays of Honey*. [1 entry.]

- 48 I. (25s.)—G. BRYDEN, 46 Star Hill, Rochester.

## Class 22.—*Exhibits of not less than 2 lb. of Beeswax*. [3 entries.]

- 51 I. (7s. 6d.)—MRS. G. SCOTT, The Cottage, Brandesburton, Hull.  
50 II. (5s.)—J. PEARMAN, Penny Long Lane, Derby.  
49 III. (2s. 6d.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

<sup>1</sup> Entries in Classes 10-13 can only be made by residents in Cheshire, Cumberland, Derbyshire, Durham, Herefordshire, Lancashire, Leicestershire, Lincolnshire, Monmouthshire, Northumberland, Nottinghamshire, Rutland, Shropshire, Staffordshire, Warwickshire, Westmorland, Worcestershire, Yorkshire, the Isle of Man, Ireland, Scotland, or Wales.

<sup>2</sup> Entries in Classes 14-17 can only be made by residents in Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Cornwall, Devon, Dorset, Essex, Gloucestershire, Hampshire, Hertfordshire, Huntingdonshire, Isle of Wight, Kent, Middlesex, Norfolk, Northamptonshire, Oxfordshire, Somerset, Suffolk, Surrey, Sussex, or Wiltshire.

**Class 23.—Exhibits of not less than 3 lb. of Beeswax.** [4 entries.]

- 54 I. (7s. 6d.)—MRS. G. SCOTT, The Cottage, Brundesburton, Hull.  
 55 II. (5s.)—J. PEARMAN, Penny Long Lane, Derby.  
 56 III. (2s. 6d.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
 54A B. N.—J. PRICE, 185 Corporation Street, Stafford.

**Class 24.—Honey Vinegar.** [3 entries.]

- 57 I. (5s.)—J. PEARMAN, Penny Long Lane, Derby.  
 56 II. (2s. 6d.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

**Class 25.—Mead.** [3 entries.]

- 58 I. (5s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.  
 60 II. (2s. 6d.)—J. PEARMAN, Penny Long Lane, Derby.  
 58 III. (Certificate of Merit.)—G. BRYDEN, 48 Star Hill, Rochester.

**Class 26.—Exhibits of an interesting nature connected with Bee-culture.**  
 [2 entries.]

- 62 I. (5s.)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

**Class 27.—Exhibits of a scientific nature, not mentioned in the foregoing Classes.**

[No entry.]

## HORTICULTURAL EXHIBITION.

**Class 1.—Groups of Miscellaneous Plants.** [4 entries.]

- 1 I. (£35.)—JAMES CYPHER & SONS, Cheltenham.  
 2 II. (£30.)—W. A. HOLMES, West End Nurseries, Chesterfield.  
 3 III. (£10.)—H. H. HILLIER, Green Park Gardens, Darlington.

**Class 2.—Collections of Orchids.** [2 entries.]

- 6 I. (£10.)—SIR JOHN SCOTT, Danby Lodge, Darlington.

**Class 3.—Collections of Delphiniums.** [1 entry.]

- 7 I. (£5.)—BLACKMORE & LANGDON, Twerton-on-Avon, Bath.

**Class 4.—Groups of Tuberous Begonias in Pots.** [1 entry.]

- 8 I. (£20.)—BLACKMORE & LANGDON, Twerton-on-Avon, Bath.

**Class 5.—Collections of Hardy Perennial Plants and Cut Blooms.**  
 [5 entries.]

- 10 I. (£25.)—HARENESS & SONS, Bedale.  
 9 II. (£20.)—ARTINDALE & SONS, Nether Green Nurseries, Sheffield.  
 11 III. (£15.)—G. GIBSON & CO., Leeming Bar, Bedale.

**Class 6.—Collections of Cut Sprays of Carnations.** [1 entry.]

- 12 I. (£8.)—WM. LAWRENSON, LTD., Yarm.

**Class 7.—Collections of Cut Roses.** [1 entry.]

- 13 I. (£10.)—ALEX. DICKSON & SONS, Howlmark, Newtownards, Co. Down, Ireland.

**Class 8.—Collections of Sweet Peas.** [4 entries.]

- 14 I. (£8.)—E. W. KING & CO., Coggeshall, Essex.  
 15 II. (£6.)—ALEX. DICKSON & SONS, Howlmark, Newtownards, Co. Down, Ireland.

**Class 9.—Best Collections of Vegetables.** [No entry.]

### Exhibits not for Competition.

Large Gold Medals to:—

- 22 ALEX. DICKSON & SONS, LTD., Howlmark, Newtownards, Co. Down, Ireland.  
 32 SUTTON & SONS, Reading.  
 36 WATERER, SON & CRISP, Bagshot, Surrey.

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### Gold Medals to :—

- 13 ALLWOOD BROTHERS, Wivelsfield, Haywards Heath.
- 19 WM. ARTINDALE & SONS, Nether Green, Sheffield.
- 30 STUART LOW & Co., Bush Hill Park, Edfield.
- 31 LAXTON BROS., 83, High Street, Bedford.
- 34 TOOGOOD & SONS, Southampton.
- 37 H. LAKEYMAN, Nurseryman, Thornton Heath.
- 39 BLACKMORE & LANGDON, Twerton-on-Avon, Bath.

### Silver-Gilt Medals to :—

- 25 JOHN FORBES, LTD., Hawick, N.B.
- 27 GARDEN SUPPLIES, LTD., 27, Crammer Street, Liverpool.
- 33 C. H. TANDRIN, Raby Flower Farm, Willaston.
- 38 C. ENGLEMAN, Saffron Walden.

### Silver Medals to :—

- 21 BROADHEAD & SON, Thongbridge, Huddersfield.
- 23 W. EDWARDS, SENR., Daybrook, Notts.
- 24 H. N. ELLISON, Bull Street, West Bromwich.
- 35 MACK & MILN, Nurserymen, Darlington.

## FORESTRY EXHIBITION.

### Class 1.—*Specimens of Oak, Elm, Ash, and Beech Timber.* [3 entries.]

- 3 Silver Medal.—MAJOR J. A. MORRISON, Basildon Park, Reading.
- 1 Bronze Medal.—THE DUKE OF MARLBOROUGH, Blenheim Palace, Woodstock.

### Class 2.—*Specimens of Larch, Spruce, and Scotch Pine Timber.* [4 entries.]

- 5 Silver Medal.—MAJOR J. A. MORRISON, Basildon Park, Reading.
- 4 Bronze Medal.—THE TRUSTEES OF VISCOUNT RIDLEY, Blagdon Hall, Cramlington S.O., Northumberland.
- H. G.—?

### Class 3.—*Specimens of any other sort of Hard Wood or Broad-leaved Timber.* [2 entries.]

- 9 Silver Medal.—MAJOR J. A. MORRISON, Basildon Park, Reading.
- 8 Bronze Medal.—THE DUKE OF MARLBOROUGH, Blenheim Palace, Woodstock.

### Class 4.—*Specimens of any other sort of Coniferous Timber.* [2 entries.]

- 11 Silver Medal.—MANCHESTER CORPORATION WATERWORKS COMMITTEE, Forestry Department, Thirlmere, Grasmere.

### Class 5.—*Collection of Planks of Home-grown Woods.* [1 entry.]

- 12 Bronze Medal.—MAJOR J. A. MORRISON, Basildon Park, Reading.

### Class 6.—*Specimens of Panels or Boards of various species, polished or unpolished; also home-made specimens of Furniture and other articles grown and manufactured on Exhibitor's Estate.* [2 entries.]

- 13 Silver Medal.—MAJOR J. A. MORRISON, Basildon Park, Reading.

### Class 7.—*Oak Field Gates for Farm use, to be hung and shown in working order with fastenings.* [4 entries.]

- 15 Silver Medal.—THE DUKE OF MARLBOROUGH, Blenheim Palace, Woodstock, Oxon.
- 17 Bronze Medal.—THE TRUSTEES OF VISCOUNT RIDLEY, Blagdon Hall, Cramlington S.O., Northumberland.

### Class 8.—*Field Gates for Farm use, of any other Home-grown Wood or Combination of Home-grown Woods.* [5 entries.]

- 20 Silver Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.
- 21 Bronze Medal.—THE TRUSTEES OF VISCOUNT RIDLEY, Blagdon Hall, Cramlington S.O., Northumberland.

### Class 9.—*Wicket or Hunting Gates.* [3 entries.]

- 24 Silver Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.
- H. G.—26.

### Class 10.—*Tree Guards.* [No entry.]

### Class 11.—*Fencing, of Home-grown Wood and made in Great Britain.* [1 entry.]

- 27 Bronze Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.

- Class 12.—*Fencing, of Foreign Timber.* [8 entries.] [No award.]
- Class 13.—*Specimens showing comparative quality of any Timber grown on different soils and situations, and the respective ages at which it reaches marketable size and maturity.* [No entry.]
- Class 14.—*Specimens of Stems, and Boards cut from them, not exceeding 6 ft. in length, illustrating the effects of dense and thin crops in branch suppression and quality of timber.* [No entry.]
- Class 15.—*Nurserymen's Competition for the best exhibit of rarer Specimens and Ornamental Trees.* [No entry.]

*Articles for exhibition only.*

- 36—42 Special Medal.—FORESTRY COMMISSION, PER R. W. HUNTER, ESQ., Armstrong College, Newcastle-on-Tyne.
- 61 Silver Medal.—ENGLISH FORESTRY ASSOCIATION.
- 74 Silver Medal.—JOHN PATTEN, JUNR., Hulme Park, Alwicliff.
- 75 Silver Medal.—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.
- 80 Bronze Medal.—THE DUKE OF WELLINGTON, K.G., Stratfield-saye, Hants.
- 82—87 Bronze Medal.—WELLMAN BROS. & CO., 42 Peacock Street, Windsor, Berks.
- 88 Bronze Medal.—WILLIAM SHEPHERD & SONS (Kendal), LTD., Westmorland Handle Works, Kendal.
- 89—90 Bronze Medal.—JOHN C. ARCHIBALD, Ashham, Penrith.
- 71—73 Bronze Medal.—J. J. CALDER, Calder House, Piccadilly, W.
- 78 Bronze Medal.—JOHN MAUGHAN, Jervaulx Abbey, Middleham, Yorks.
- 79 Bronze Medal.—LITTLE & BALLANTYNE, Carlisle.

## PLANTATIONS COMPETITIONS.

Restricted to Durham, Northumberland, Westmorland, Cumberland, and the North Riding of Yorkshire.

Plantations must not be of less than ten years' growth.

STAGE A.—Plantations which have been weeded or lightly thinned, including the removal of dead or dying trees.

STAGE B.—From the end of STAGE A up to the completion of the second thinning.

HARDWOODS as final crop. To be not less than 4 acres in extent.

**Class 1, Stage A.**

(No entry).

**Class 2, Stage B.**

(No entry).

CONIFERS. To be not less than 4 acres in extent.

**Class 3, Stage A.** [5 entries.]

Silver Medal.—MANCHESTER CORPORATION WATERWORKS COMMITTEE, Forestry Department, Thirlmere, Grawmere.

Bronze Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.

**Class 4, Stage B.** [7 entries.]

Silver Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.

Bronze Medal.—THE HON. W. H. C. BEAUMONT, Dilston Hall, Corbridge-on-Tyne.

Class 5.—*Best examples showing systematic management of existing Woodland area including the renovation and conversion of an unprofitable wood into a profitable condition.* [5 entries.]

Silver Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.

Bronze Medal.—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.

H. C.—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.

Class 6.—*Plantations of not less than 2 acres consisting of Douglas Fir, Sitka Spruce, Japanese Larch, Corsican Pine, or any other rarer conifer, pure or mixed, of not less than five or more than thirty years' growth.* [7 entries.]

Silver Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.

Bronze Medal.—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.

<sup>1</sup> Special Medal given by the Royal Agricultural Society of England for the best general Collection of Exhibits in the Competitive and Non-Competitive Sections.

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**Class 7.**—*Best managed woodland estates, not less than 1,000 acres in area.*  
[3 entries.]

**Special Medal.**—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.

**Silver Medal.**—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.

**Bronze Medal.**—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.

**Gold Medal,** given by the Royal English Arboricultural Society for the best plantation  
to the MANCHESTER CORPORATION WATERWORKS COMMITTEE, Thirlmere, Grasmere.

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## ESTATE NURSERIES COMPETITIONS.

[7 entries.]

**Silver Medal.**—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.

**Bronze Medal.**—MANCHESTER CORPORATION WATERWORKS COMMITTEE, Forestry  
Department, Thirlmere, Grasmere.

**H. C.**—EARL OF DURHAM, K.G., Lambton Castle, Fence Houses, Durham.

## IMPLEMENTS.

### Miscellaneous Implements.

*Silver Medals for articles entered as "New Implements for Agricultural or  
Estate Purposes."*

596 DAIRY SUPPLY CO. LTD., Museum Street, London, for Recording Thermometer.

1095 A. C. BAMLETT, LTD., Thirsk, for Potato Digger. "Bamlett."

2984 BAMFORDS LTD., Gttoxeter, for Oil Engine. "The Bamford."

3384 N. V. MACHINEFABRIEK "DE POL," Zutphen, Holland, for Threshing Machine.

3370 & 3372 PHIPPS & SONS, Chippenham, for Self-Lift arrangement applied to plough  
or cultivator.



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